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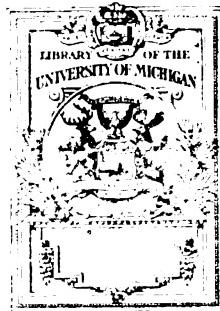
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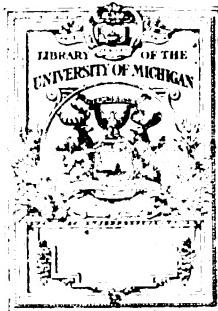


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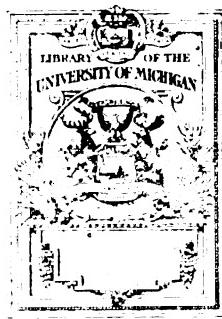
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ALBANY MEDICAL ANNALS

Journal of the Alumni Association of the
Albany Medical College

VOLUME XXXIV

*Ασφαλές καὶ ἔμπεδον ἔστω τὸ σὸν ἄδος. Ἐκ σκότου μὲν
ἔξαγε φόδος, ἐκ δὲ πάθους ἀναφυχήν.*



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ALBANY MEDICAL ANNALS

Original Communications

FRACTURE OF THE FEMORAL NECK; ITS ANATOMIC TREATMENT.

By C. E. RUTH, M. D.,

Des Moines, Iowa.

One-sixth of all fractures are of the femoral neck. One-third of all fractures of the aged are of this class. Nearly every community has one or more cripples from this cause. Many of these accidents are fatal. These facts at once announce its importance that it is a grave injury and that it has not been successfully treated, as a rule. The question is, are these results due to following blind precedent in treatment or are they unavoidable. From the reports of some two hundred cases treated by the Maxwell "Anatomic Method," I have no hesitancy in saying that there is no more need of bad results in the treatment of this than of any other fracture of the leg or thigh, that union should, and under proper treatment will occur in every case which has vitality enough to live four weeks after the injury, and that all such cases living four months will have good serviceable limbs. The treatment is really very simple and can be applied by anyone with mediocre mechanical ability at a cash outlay for equipment of not to exceed fifty cents to one dollar. The cuts illustrating this method used by Fowler and copied in Keen's System of Surgery, are unfortunate, appear complicated and are misleading.

The principles of the treatment are to first overcome the pull of all the muscles crossing the fracture line, whether they act:

(a) *Vertically* (as the rectus femoris, satorius, gracilis, tensor vaginalis femoris, long head of the biceps, semi-tendinosus and vertical part of abductor magnus);

(b) *Obliquely* (nearly all parts of the glutei, pectineus, adductors brevis, longus, and oblique part of the adductor magnus);

(c) *Internally* as all the rotators (*obturator internus* and *externus*, *pyriformis*, *gemelli*, *external rotators* (*psoas* and *iliacus* after fracture of the femoral neck, while formerly they were neutral or internal rotators).

Posterior displacing influence of the limb's weight upon the lower fragment tending to carry it behind the upper fragment while the combined action of the muscles cause

- (a) overriding of the fragments,
- (b) tilting of the upper fragment,
- (c) forcing of the soft parts between the fragments by the action of the *psoas* and *iliacus*.

All these influences can be overcome and all deformity of

- (a) shortening,
- (b) flattening of the hip,

(c) external rotation, can be made to entirely disappear at once when the treatment is properly applied, all pain at once relieved and the patient is kept comfortable so long as the treatment is properly continued. The patient can attend to nature's calls without difficulty more than naturally results from the dorsal decubitus and without pain or disturbance to the fragments. The patient may be raised to the sitting posture as often as may be required for rest, cleansing, or to prevent hypostatic pulmonary congestion without in any way disturbing the fragments or interfering with repair. While these displacing influences of muscle force and weight can be entirely overcome, it is plain that force must be applied so as to pull directly in the line of the normal direction of the neck of the femur and be of such force as to overcome all deformity and displacement.

It is at once apparent also that if such traction force can be applied in the normal line of the neck of the femur it must also make taut whatever remains of the capsular ligament which will by its vincular connections to the fragments in a sleeve-like action adjust, align and maintain the proper position of all fragments so long as the proper amount and direction of the traction is continued. It is self-evident that such a pull cannot be adjusted by any single traction force but can easily be secured as a resultant of two forces; *first*, *viz*, vertical or longitudinal by a Buck's extension, using the patient's body weight as the counter extension by elevating the foot of the bed ten to sixteen inches, applying a sufficient pull in this direction to make the longitudinal measurement of the two limbs equal; *second*, a lateral outward

pull on the upper end of the lower fragment so directed as to elevate the trochanter, making it as prominent as the one on the opposite side and to relieve all pain. The resultant of this lateral and vertical pull so applied as to overcome all disparity, (a) in length of the limbs, (b) position of the trochanters, (c) external rotation, or eversion of the foot, (d) relief of all pain, will give a resultant whose line of action falls through and in the axis of the normal neck of the femur.

(a) The Buck's extension adhesive plaster must be first non-irritating (the Z. O. plaster has given me the best of satisfaction); (b) extending from well up on the thigh to near the malleoli; (c) must be at least two inches wide, with encircling apposition strips of same above the ankle, below and above the knee and at the upper end of the plaster, to give the maximum amount of distribution of the traction force, and yet must not constrict the circulation; (d) must have a spreader below the foot wide enough to prevent pressure of the adhesive strips on the malleoli; (e) the leg should be supported upon a pillow so the heel bears no weight; (f) the knee must be lifted six to eight inches every day or two to flex the leg and prevent ankylosis; (g) the pull is arranged for by a jug or bucket attached to the cord passing over the pulleys and in it weight is placed, as shot, water or sand; (h) the weight must be heaviest at first and may be reduced gradually only after the muscles have been tired out by several days pull, and when there are no longer any paroxysms of pain from spastic muscular contraction disturbing the fragments.

The lateral pull must be arranged for: (a) by moulding a binder's board six inches wide to the upper inner aspect of the thigh as close as possible to the body and long enough to two-thirds encircle the thigh,

(b) It must be secured in position by an adhesive strap, passing entirely around the thigh over the middle of the binder's board.

(c) Avoid chafing from the upper edge of the binder's board by having a thick layer of gauze or cotton under it and extending just a little above its edge.

(d) The pulley for the lateral traction should usually be placed opposite the highest part of the iliac crest.

(e) It should be high enough above the bed so that the lateral pull upon the traction loop which passes around the upper end of the thigh shall be in such direction, when of proper force,

as to overcome eversion (external rotation), flattening of the hip or a tendency of the trochanter to fall behind a corresponding level of the opposite trochanter.

(f) The lateral traction loop around the upper end of the thigh is best made of strong adhesive plaster to which the pulley cord is attached. This enables a very easy adjustment and control of the eversion (rotation proposition) by shortening or lengthening the lower limb of the traction loop because the binder's board is fixed to the thigh and the traction loop is fixed to the binder's board, thus giving absolute and easy control of all rotation difficulties enabling one to prevent eversion deformity with certainty.

(g) The lateral traction weight should ordinarily be about two-thirds the longitudinal pull, but in very fleshy feebly muscled persons the lateral pull at times must be equal to the longitudinal pull.

(h) The bed on the injured side should be raised two or four inches as may be needed to prevent the patients working toward or away from the lateral pulley.

In applying the lateral extension it is wise to place a spreader in the loop the full width of the thigh where the band passes around it, so as to avoid compression of the long saphenous or femoral vessels. Failure to observe this precaution has in a few cases caused somewhat annoying oedema of the limb. The advantages of this treatment is its applicability to every age or condition, its simplicity of application, its certainty of adjustment of the fragments, absolute freedom from pain, maximum of liberty in change of position, uniformity of satisfactory results, inexpensiveness of appliances. Good bony union has been secured by this treatment in patients who had gone from two to seven weeks without reduction of the fracture. With proper care bed sores and all chafing or ulceration of parts can be avoided. In cases suffering from bed sores when the treatment was begun the sores have uniformly been cured during the use of the treatment and without any pain or inconvenience to the patient. In reducing the fracture it is wise to always flex the thigh upon the abdomen to a right angle with the trunk and while traction is made upward on the flexed thigh an assistant should make outward traction on the pelvic end of the thigh so as to disengage any soft parts from between the fragment while the limb is being extended under traction because flexion of the thigh brings the line of action of the psoas and iliacus

To Illustrate Dr. Ruth's Article on "Fracture of the Femur
Its Anatomic Treatment."

Albany Medical Annals, January, 1913



FIG. 1.—Artificial muscles (psoas and iliacus) in close pressure contact of the same with the shaft of the femur in the position of ordinary extension of the thigh. By this means, in the absence of the caliper with the muscles yet able to stand the heavy strain, it is very easy to demonstrate that (in extension) these muscles are internal rotators.



FIG. 2.—Shows the artificial muscles acting as external rotators after fracture because the line of resistance affects the line of action of these muscles with their line of action. It also plain muscles to force the soft parts to produce a mechanical hindrance the thigh upon the abdomen at these muscles above the fracture longitudinal and lateral, they are between the fragments or interference traction is maintained.

To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck;
Its Anatomic Treatment."

Albany Medical Annals, January, 1913



FIG. 3.—Specimen of fractured neck of the femur from Mr. R., aged 72, treated by the late Prof. T. J. Maxwell. No shortening was discoverable but slight eversion persisted. There was no impairment of function. The shortening at the time of the injury was two inches and there was complete eversion. He lived 20 years after the fracture, death taking place at the age of 92 years.



FIG. 4.—Same as figure 3, sawed open to show the interior. The specimen has crumbled some from age and exposure as well as rough handling.



FIG. 5.—From fracture of the femoral neck in Mrs. D., aged 78. She was treated by Drs. O. D. Walker and J. H. Coulter. Shortening was one-half inch. There was no impairment of function. For eight years thereafter she did the ordinary work of a farm-



FIG. 6.—Mr. R., aged 70 years, and suffering from cerebral softening, fractured the femoral neck, for which latter he received no treatment for one week thereafter. He had one and one-half inches of shortening with complete eversion of the foot when he came under the care of Drs. C. A. Jenkins and Prof. T. J. Maxwell a week after the fracture took place and was treated by them for four weeks when death occurred, but union was found to have taken place without shortening. Had this patient lived for one year it would have been difficult if not impossible to have determined that a fracture had ever taken place. Death was caused

To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck; Its Anatomic Treatment,"
Albany Medical Annals, January, 1911.

Albany Medical Annals, January, 1911.



FIG. 7.—Same as figure 6, sawed open and the line of union rouged out somewhat to make it more clear. The result would have been quite as good in this case as in that of figure 1 had the patient lived for one year after the accident.



FIG. 8.—Mrs. H., aged 70 years, suffered a fracture of the right femoral neck and had no treatment for the condition for one week thereafter and was excoriated from failure to receive proper care owing to the pain of handling which she could not tolerate. She was found with shortening of one and one-half inches and complete eversion. Under treatment union was obtained in four weeks without demonstrable shortening though some eversion persisted. There was no impairment of function. Both bones are presented for comparison. She was suffering from lupus when the fracture took place but lived three years thereafter without impairment or function in the injured limb. Physician, C. E. Ruth.

To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck; To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck; Its Anatomic Treatment."

Albany Medical Annals, January, 1913

Albany Medical Annals, January, 1913



FIG. 9.—Mrs. W., aged 71, sustained fracture of the neck of the right femur two inches with complete eversion and halplexness. Union was secured in four weeks but there was a persistent slight eversion and a slight limp. Shortening was a scant one-half inch. The corresponding bone is presented for comparison, though in the photograph the eversion is not apparent, but it is easily detected in the specimen. The heads of these bones have been damaged by age and rough handling. Physician, C. E. Ruth.



FIG. 10.—Represents the front view of a fracture of the neck of the right femur, through the base, in the case of Mrs. B., aged 74, in which the neck of the femur was not only fractured but the great and lesser trochanters were separated, together with the intervening intertrochanteric line and part of the shaft, so that an attempt to have used the abduction method of Whitman would have only increased the displacement and separation of the fragments because the trochanters had lost all connection, except a slight peristomial bridge, with the shaft. Shortening in this case was about one and one-fourth

To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck;
Its Anatomic Treatment."

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FIG. 11.—Posterior view of figure 10.

To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck;
Its Anatomic Treatment."

Albany Medical Annals, January, 1913



FIG. 12.—Represents the proper position of the bed, foot raised and the injured side raised so that the patient's body weight will make the counter extension. No other or complicated apparatus is ever needed or indicated. For a robust adult the weight on the foot will need to be, at the first, from 25 to 30 pounds, the lateral pull to 10 to 20 pounds, reasonable care in the adjustment of sufficiently extensive, non-irritating, adhesive material so placed as not to cause constriction of the circulation, proper adjustment of the spreaders at the foot, support of the leg to take the weight off the heel, adjustment of the properly padded bindersboard fixed by adhesive to the upper-inner part of the thigh and with spreader to prevent pressure upon the long saphenous, with frequent raising of the patient to the sitting posture, particularly if aged, will meet and prevent nearly all annoying complications.

**To Illustrate Dr. Ruth's Article on "Fracture of the Femoral Neck;
Its Anatomic Treatment."**

Albany Medical Annals, January, 1913



FIG. 13.—Shows the psoas and iliacus causing eversion, external rotation, shortening and forcing soft parts between the fragments.



FIG. 14.—Illustrates the close contact of the psoas and iliacus with the neck of the extended femur and can be used to prove they are internal rotators of the thigh until fracture occurs of the femoral neck when they immediately become external rotators.



FIG. 15.—Shows the psoas iliacus well above the neck of the femur in flexion of the thigh at the abdomen which should always be the first step in the reduction of fracture of the neck and it clears all soft parts from between the fragments if any such been caught.

muscles above the fracture line in such manner that they can no longer force soft parts between the fragments. (See Figures 1, 2, 13 and 14.) Plaster casts of whatever form are in the obese perfectly loose within three or four days and in the feeble are liable to chafe severely and in hot weather are very irksome in all cases. No form of splint can entirely overcome the displacing forces of weight and muscle action.

AUTHORSHIP ACKNOWLEDGMENT.

Since submitting the foregoing article for publication, my attention was called to a paper on "Fractures of the Neck of the Femur," written by Dr. Gwilym G. Davis of Philadelphia and published in the October number of the *Annals of Surgery*. In this article the statement is made that a surgeon named Phillips first called attention to the lateral and longitudinal method of treatment of intracapsular fractures of the neck of the femur.

I immediately began a search of the literature and find that Dr. G. W. Phillips of Dixon, Illinois, published an article pertaining to this subject in the *American Journal of Medical Sciences* for October, 1869. In this article Phillips not only reports a case occurring August 10, 1867, as treated by lateral and longitudinal extension and counter extension, but illustrates the method by the use of a wood-cut. He employed, also, a wooden splint which extended from the ankle to the axilla.

In the *Chicago Medical Journal and Examiner* for May, 1876, occurs the first article written by Dr. T. J. Maxwell on the subject of intracapsular fractures of the femur. Maxwell reports his first case which occurred on January 14, 1871, and toward the close of his article makes the statement that the method is not original with him but that he obtained the idea from an article (undoubtedly Phillip's) published in the *American Journal of Medical Sciences*. Maxwell, however, discarded the use of the side splint since it added nothing to the treatment but only increased the discomfort of the patient and rendered an inclining or sitting posture impossible.

In the perusal of Maxwell's subsequent writings I have been unable to find where he has ever given credit for the authorship of the method other than to himself, nor to my knowledge did he ever allude to a priority claim in any of the numerous lectures and discussions which he gave on the subject. So to Dr. Phillips must belong the honor and credit of first describing and using this method of treatment unless Fate in her mysterious manifestations should decree that he too erred, and some student of medicine unearths a claim prior to the one now recorded.

I wish to express my appreciation not only to Dr. Davis, whose article made possible at this time the readjustment in the authorship of the method which I have always termed the "Anatomic Method," but to his colleague, Dr. A. P. C. Ashurst, who so ably brought out some very salient points in his discussion of Dr. Davis's paper which better enabled me to obtain the proper literature on the subject.

A CONTRIBUTION TO THE SYMPTOMATOLOGY OF CEREBRAL ABSCESS WITH ESPECIAL REFER- ENCE TO DIAGNOSIS AND TO INDICA- TIONS FOR SURGICAL INTERVENTION.

REPORT OF TWO CASES IN WHICH OPERATION WAS FOLLOWED BY RECOVERY.

Read before the section on Mental and Nervous Diseases, Eugenics, and Medical Expert Testimony, at the One Hundred and Sixth Annual Meeting of the Medical Society of the State of New York, held in Albany, April 16th to 18th, 1912.

By LA SALLE ARCHAMBAULT, M. D.,

Adjunct Professor of Neurology in the Albany Medical College, Attending Neurologist to the Albany City Hospital and to the Troy City Hospital.

Despite the fact that the last decade has furnished an exceptional number of valuable publications on the diagnosis and treatment of cerebral abscess, we still stand sadly in need of additional diagnostic data before we can hope to fully materialize the unquestioned efficiency of surgical intervention in this particularly fatal affection. While there is perhaps no focal disease of the brain which offers, when opportunely diagnosticated, greater probabilities of surgical success, there is none which yields a more elusive and unreliable symptomatology. The diagnosis of cerebral abscess, therefore, is always attended with considerable uncertainty.

It is well known that cerebral abscess occasionally pursues a very chronic course without giving rise to any symptoms whatever, or else to such indefinite manifestations (hebetude, ill-defined psychic alterations, etc.), that its clinical recognition remains utterly impossible. Its existence is discovered with surprise at the autopsy. This is particularly apt to be the case when we have to do with abscesses situated in the so-called silent areas of the brain. It is encouraging to note, incidentally, that these silent areas are becoming more and more responsive, as our knowledge of anatomy and physiology increases, and as our powers of clinical observation are trained to greater diligence and acuity. The recent upheaval in the aphasia doctrine, which followed the radical assertions of Marie, affords, in this connection, a striking example of the gigantic strides which overtake now and then the habitually sluggish pace of our progress. The fertilizing influence of this heated controversy upon our con-

ceptions of the physiology of the temporo-sphenoidal lobe still remains to be duly appraised; we are only now entering the phase of reactive calm, and yet we already have registered a number of valuable and viable acquisitions. Such outbursts of rebellion against classic dogma are essentially wholesome, and even should Marie's contentions be ultimately regarded as fundamentally erroneous — a fact which still remains to be proved, medical science shall have become deeply indebted to this eminent clinician for the inestimable services he has rendered.

A circumstance which has materially impeded our progress in cranial surgery is to be found in the fact that the very seat of predilection of otitic abscesses is one or the other of the so-called silent areas (temporal lobe, cerebellar hemisphere), and that such abscesses constitute more than one-half of all cases. This annoying feature is less disquieting, however, in the hands of competent and experienced otologists to whom the close relationship is a matter of intimate knowledge. The more or less sudden appearance of severe cerebral disorder in a subject previously suffering from otitis media awakens suspicion at once. It is true that the manifestations of intracranial involvement in such cases may be due to meningitis or to sinus thrombosis, as well as to cerebral abscess, that the clinical picture of the latter may not be at all typical, and that frequently, even, the symptoms of all three conditions may be practically identical or else associated. It matters little in reality, inasmuch as the question of accurate diagnosis is of relatively little moment in comparison with that of arriving at a satisfactory conclusion regarding the necessity of operative intervention. It is pretty generally recognized to-day, that all three conditions are amenable to surgical treatment and that all three are accessible by the same operative procedure, if, as Broca and others have recommended, the mastoid route be chosen.

A somewhat analogous view may be taken of abscesses resulting from traumatism about the head. The symptoms develop either shortly after the accident or only some considerable time afterward, but a distinct history is usually obtainable and sometimes a scar is visible, the seat of intracerebral focal disease generally corresponds approximately to that of the injury, and the symptoms, in the great majority of cases, are fairly characteristic. Both the diagnosis and the indication for operation are usually plainly evident.

It is all otherwise when cerebral abscess develops in individuals who give no history of traumatism or of pre-existing otorrhea, and in whom the most careful inquiry into antecedents as well as the repeated and rigid physical exploration fail to reveal the slightest clue as to the probable nature of the affection. Under these circumstances how are we to be guided in our efforts at reaching an early and accurate diagnosis? Many valuable suggestions are undoubtedly to be found in the works of such excellent observers as Brissaud, Oppenheim, Broca, Osler, Starr and others, and it is essential, for the later discussion of the cases reported in this communication, that brief reference be made to the actual interpretation of the general clinical evolution of cerebral abscess, as well as to some of the more recently acquired data which possess diagnostic significance.

It is customary to divide the symptomatology of abscess of the brain into several stages, which have been called the stages of excitation or invasion, of remission and of paralysis, by some authors, while others have designated them as the initial, the latent and the terminal stages. Many classifications have been proposed, but, of all of them, that of Auguste Broca appeals to me as being the most rational and practical. This author divides the symptomatology of cerebral abscess into symptoms of suppuration, diffuse symptoms of intracranial hypertension and symptoms of local cerebral disorder.

In the majority of text-books the occurrence of a latent stage in the clinical evolution of cerebral abscess is mentioned, and in some of them it is referred to as a diagnostic sign of particular value. This appears to me lamentable in the extreme. I am convinced that our very knowledge of the existence of this latent or remission period is directly responsible for many blunders in diagnosis as well as for a number of tardy and fruitless interventions. That a latent stage occurs in cerebral abscess is unquestionable; nevertheless it is an inconstant rather than a usual manifestation of the disease, and, when it is present, it is not as latent as is believed generally. I have heard both Oppenheim and Broca pleadingly insist upon the recognition of symptoms which exist during the so-called latent stage of abscess. In the majority of such cases, careful observation will usually reveal an evening rise in temperature with recrudescence of headache and sometimes of vomiting, mental depression or other changes in mood and character, progressive emaciation, etc.

Sometimes examination of the blood will show distinct evidence of the continuance of a danger which had at first appeared to have entirely retroceded. At any rate, the latent stage as an element of diagnosis is to be rejected entirely. Its termination marks the dawn of a fatal issue and coincides most commonly with the rupture of the abscess into the ventricle. Against pyocephalus, surgery is powerless.

The symptoms of suppuration determined by cerebral abscess do not differ of course from those which indicate suppuration in other parts of the body. Thus, there may be a distinct febrile reaction, chills followed by profuse perspiration, and, in chronic cases, progressive emaciation. Naturally, it is only when they are associated with signs of intracranial hypertension or of local cerebral disorder, that these symptoms acquire definite diagnostic value. The most important of them is fever, and when its presence is repeatedly ascertained, it becomes one of the most reliable elements in diagnosis. Unfortunately, fever is by no means a constant accompaniment of abscess of the brain. If we are to be guided by the statements of as eminent an observer as Macewen, we shall have to admit that the majority of cases exhibit, throughout their course, normal or subnormal temperatures.

The general symptoms of cerebral abscess such as headache, vertigo, vomiting, mental changes, etc., whether associated with fever or not, are in themselves of little significance, inasmuch as they also occur in meningitis, tumor and many other affections of the brain. The same may be said practically of generalized muscular twitching and convulsions. Of all these symptoms, headache is unquestionably the most important, as it occurs not only as a symptom of cortical or meningeal irritation, but also as one of increased intracranial pressure. It is sometimes slight, but rarely absent entirely. Of value as regards the existence of abscess, its situation cannot be relied upon for topical diagnosis. This headache may or may not be associated with localized tenderness to pressure or percussion, a symptom pointed out especially by Horsley as occurring both in tumor and in abscess. Too much reliance should not be placed upon this sign. I know of instances in which undue significance attached to it led to unnecessary and sterile interventions. In this connection, reference may also be made to the heightened pitch and greater resonance of the percussion note sometimes observed over the seat

or in the immediate proximity of the lesion. This test, first described by MacEwen, may yet prove of considerable value, but its application is difficult and many cases are on record in which competent observers have failed to elicit the phenomenon. Of greater significance for diagnosis are the symptoms of increasing intracranial tension, particularly the intellectual torpor and the gradual reduction in pulse-rate. While these same manifestations are observed in the course of cerebral tumor, a decidedly longer period of time elapses before they attain appreciably significant proportions. This is particularly true of the changes in mental disposition, which are rarely absent in cerebral abscess whatever the seat of lesion may be. I have been deeply impressed with the importance of this symptom and believe that it is a very early manifestation in the great majority of cases. These alterations of psychic integrity are not always pronounced, nor are they always of the same type. States of maniacal excitation have been described as well as conditions of retarded cerebration and mental apathy. The condition which I have most frequently observed may be characterized as one of progressive diminution of intellectual acuity, as one of sluggish and visibly labored cerebration. It is a peculiar mixture of disorientation, indifference and mental inertia. Starr has correctly qualified the condition seen in many cases, when he states that the patient presents "an appearance of illness out of all proportion to the other symptoms."

Changes in the eye-grounds are of little value in diagnosis. They occur both in tumor and in abscess, although they are far less frequent and usually of decidedly lesser intensity in the latter.

In recent years attention has been directed to certain alterations which appear in the blood picture in the course of cerebral abscess. An increase in the relative proportion of polymorphonuclear cells above 85 per cent on differential count has been repeatedly observed, and this is usually associated with a leucocytosis of greater or lesser degree. The features and variations of the blood picture together with their significance have been well described in the latest work of M. Allen Starr which may be consulted with advantage. When these blood changes are present they are unquestionably of considerable importance. Cases in which they are totally wanting, however, are not uncommon.

The local symptoms of functional disorder which occur in cerebral abscess will naturally vary with the seat of the lesion. Of the greatest importance in ensuring well-directed attempts at surgical relief, they afford in themselves little if any evidence of the nature of the lesion. It is only when taken in conjunction with other factors, such as above described, that they acquire significance in this direction. Focal symptoms indicate focal disease and their clinical features are practically identical whether we have to do with a vascular lesion, a purulent focus, or a neoplasm. There is, however, in my opinion, one exception to this rule, and that is the hemiplegia which appears in the course of cerebral abscess. I believe that this hemiplegia exhibits a mode of development which is peculiar to it, and to it alone. I refer to the progressive hemiplegia which is mentioned in connection with the symptomatology of cerebral abscess in a number of text-books, but the description of which is either inadequate, or, more frequently still, wanting entirely. The symptom is not new, but I am convinced that it has been grossly neglected and that its diagnostic significance is ignored by many. The peculiar features of this hemiplegia were first emphasized, as far as I know, by Hirt. A comprehensive description of the symptom is to be found in the work of Oppenheim and in the article on encephalitis by Brissaud et Souques in the *Traité de Médecine* of Charcot, Bouchard et Brissaud. In this country, the only available reference of value which can be furnished regarding the hemiplegia of cerebral abscess, is the article by E. E. Southard in Osler's *Modern Medicine* (Vol. VII). This author whom I take pleasure in quoting, describes the condition in the following terms: "Paralytic symptoms tend to be monoplegic, and if hemiplegia eventuates the parts are successively and not simultaneously involved." The full characters of this hemiplegia and the peculiar mode of its development will become evident from the study of the two cases which follow.

Case I.—Miss B. M., age 22, housekeeper at the home of her parents. Admitted to the Albany City Hospital July 31, 1911.

Past history entirely negative as far as could be ascertained. Patient is said to have been perfectly healthy up to the time of present illness, although close questioning revealed the fact that she had had considerable headache for some little time previous to the onset of the more serious manifestations which led to her admission to the hospital.

History of Present Illness.—It was in the afternoon of the preceding Tuesday, July 25th, that the first alarming symptom appeared. The

patient stated that while she was busy doing housework she gradually lost the use of her right arm; the weakness being first noticed in the hand, but later involving more or less the entire extremity. The following Friday, July 28th, three days later, the same disability gradually developed in the right leg. At the same time stomach disturbances appeared so that the patient had several severe vomiting spells. She also stated that she felt feverish and sick all over.

Physical examination shortly after admission revealed the following condition: Complete motor paralysis of both arm and leg on the right side. The upper extremity was markedly atonic, the lower faintly rigid. The tongue was slightly deviated toward the right, but there was not the least trace of a right-sided facial palsy. All the tendon reflexes were elicited without difficulty, but were distinctly weaker on the affected side. A typical Babinski phenomenon existed on the right side and contrasted singularly with the abnormally lively plantar flexion observed on the left. The pupils were equal and yielded normal responses to light and to accommodation efforts. The organic reflexes were undisturbed. Examination of the sensory functions failed to demonstrate the existence of any definite disorders, save perhaps a slight degree of impairment of muscle-sense in the right hand and foot. The patient looked dull and fatigued; her countenance bore the unmistakable signature of serious illness. Although the patient understood perfectly all that was said to her and executed orders accurately, cerebration was sluggish; while words were correctly articulated, answers came slowly and mental effort was plainly visible. Her temperature taken at this time was 99.6 degrees. The pulse rate and arterial tension were practically normal.

I was unable to see the patient again until two days later (August 2nd). Upon returning to the hospital, I learned that in the course of the preceding evening and at various times during the night the patient had had a series of severe convulsive seizures, one closely following the other, the condition at one time being practically that of status epilepticus. These convulsions invariably began in the right leg, then involved the right arm, and finally reached the musculature of the right side of the face. All of these attacks were strictly limited to the right side of the body; at no time were muscular twitchings observed on the left side. During the majority of the seizures consciousness was completely lost. Otherwise the condition of the patient had not changed materially. She complained very little of headache. The temperature had come down to normal and the pulse-rate remained at about 90.

The next day (August 3rd), the severity of the clinical picture had made a frightful headway. There had been no further convulsions of the entire right side with loss of consciousness, but muscular twitchings in the right arm and in the lower part of the face were observed at frequent intervals and lasted several minutes. At the time of my visit there was almost constant twitching at the right angle of the mouth. A right sided facial palsy was not very noticeable and, to our great astonishment, the patient had developed an absolute motor aphasia. There was not, however, the faintest trace of sensory aphasia. The young woman still

executed orders correctly, but it was evident that the mental operations were rapidly submerging. She looked extremely dull and inert. The tendon reflexes on the paralyzed side were now distinctly livelier than on the healthy side. The pupils were dilated, but equal, and responded rather feebly to light. Ophthalmoscopic examination disclosed a very pronounced degree of choked disc on either side. The temperature had become subnormal and reached as low as 96.4 degrees on two occasions. The pulse-rate oscillated between 80 and 60, and once slowed down to 50. Repeated uranyses and blood examinations showed no definite changes. The leucocyte count never exceeded 6,600. Unfortunately a careful differential count was not made.

In the presence of such alarming developments, one conclusion was inevitable, and that was the necessity of immediate surgical intervention. This was urged at once, but unfortunately before the full consent of the patient's family enabled us to proceed twenty-four hours had elapsed. During this interval of delay, the young woman's condition grew steadily worse, the increasing dulness deepened into a stupor until well-defined coma supervened. The temperature remained subnormal until a few hours prior to operation when it rose to 100 degrees, the pulse became weak and rapid, the almost constant twitching at the right angle of the mouth persisted and, finally, a beginning divergent strabismus became manifest.

Such was the discouraging aspect of affairs when on the morning of August 5th a desperate attempt to save the patient's life was entrusted to Dr. Edgar A. Vander Veer, attending Surgeon to the Albany City Hospital.

My initial diagnosis, and that which I continued to favor throughout, was cerebral tumor, although the alternate possibility of cerebral abscess was expressed. While my friends had the courtesy of reminding me of the fact afterwards, I frankly admit that the probability of abscess never appealed to me.

Operation.—After careful preliminary markings and the usual aseptic precautions, the pericranium was incised and the trephine first applied at a point corresponding to the middle segment of the ascending parietal convolution of the left cerebral hemisphere. The brain was uncovered over an area approximately two and a half to three inches in all diameters. The aperture in the skull was later slightly enlarged downward to facilitate drainage. As the dura was incised, a well-defined area of circumscribed leptomeningitis came into view; the meninges were decidedly opaque, and yellowish streaks of exudate were plainly visible along the blood vessels. Exploration of the subcortical matter by means of a fine trochar soon led into an abscess-cavity of considerable size. Fully two ounces of a very foul smelling pus were evacuated right then and there. The opening into the cavity was enlarged sufficiently to ensure proper drainage and a soft rubber catheter left in situ. After having apposed at two or three points the edges of the external wound and carefully dressed the head, the patient was returned to the ward. Direct examination of the pus and of the growth on culture-media at the Bender

Laboratory showed that the micro-organism concerned was the staphylococcus pyogenes albus.

Subsequent History.—For almost forty-eight hours the outlook was far from brilliant. The temperature ranged from 101 degrees to 102.4, the pulse from 120 to 150, the stupor remained practically unchanged, the facial twitching continued. From this time on, however, consciousness gradually returned, the temperature came down very slowly to the normal point, the pulse resumed its normal characters, the strabismus and labial spasm disappeared. The first manifestation of reappearing cerebration was the patient's ability to say "yes" and "water" the third day after operation. Naturally, this was hailed with enthusiasm, even though no further additions to the vocabulary appeared for fully a week. After that the patient gradually learned to say other things, and by August 28th, about three weeks after operation, she was quite able to express many of her wishes. The return of motor speech since then, however, has been extremely slow up until very recently. For a long time spontaneous speech remained far in advance of that revealed by clinical examination. There were many words which the patient could not find, many of which she articulated imperfectly, but she never used the wrong word, and if we used it for her, she at once interposed her objection. Her speech difficulty, however, remained strictly within the limits of motor aphasia; she always appeared to fully comprehend all that was said to her and around her, and has at no time exhibited the least trace of sensory aphasia.

The first return of motor power was noticed August 15th, ten days after operation, when the patient began to exhibit a certain degree of flexion and extension both at the hip and at the knee. The movements of the right lower extremity gradually became stronger and ten days later, August 25th, slight flexion of the fingers and forearm was observed. This improvement gradually increased, although very slowly. The wound discharged abundantly for several days and the dressings were so rapidly saturated with offensive sero-purulent material that very frequent changes were indispensable. Drainage was carefully maintained for several weeks and the patient was discharged October 22nd, remarkably improved, but certainly not restored to her former functional integrity. Her condition at this time may be summarized as follows: Patient is quite able to walk unassisted but the gait is distinctly hemiplegic in character. The motor weakness in the lower extremity chiefly involves the peronei and the extensors of the foot. In the upper extremity, abduction of the arm cannot be carried beyond the horizontal; flexion and adduction of the forearm have been recovered sufficiently to enable the patient to carry the hand to the mouth. Grasp of the hand fairly good. The extensors of the fingers, hand and forearm, still markedly disabled. The tongue exhibits a slight deviation to the right. There is still distinct drooping of the right angle of the mouth when patient is asked to show the teeth, but perfect elevation when she is incited to laughter. The faradic responses are excellent in all the muscular groups. The tendon reflexes are all exaggerated on the right side; a persistent ankle clonus and a typical Babinski still obtain. The pupils are normal in size, equal, and give perfect responses. There is thus, in this patient, a distinct residual

hemiparesis, but in all fairness it seems quite legitimate to feel satisfied with this result, when we consider the initial gravity of the lesion we were called upon to combat.

Actual Condition.—Upon leaving the hospital, the patient returned to her home in the country, and despite my repeated requests to have her brought back for observation nothing was heard of her until I resolved to ferret her out myself, which I did a few days ago. It was then learned from the mother that the young woman had had three convulsive seizures since she had left the hospital. The attacks appeared at intervals of two months, but while the first two had been quite severe, the last one was very slight. Otherwise the patient shows decided further improvement. Although a mowing gait is still evident, the right leg is stronger and is moved in all directions with greater facility. The right arm is carried well above the head and motion at the elbow is practically perfect, but there still remains an appreciable degree of wrist drop. While the fingers can be flexed strongly, the more delicate movements of the hand and fingers have not been regained and writing is consequently impossible. Of all the evidences of recovered function, motor speech offers the most striking. The patient is quite able to carry on ordinary conversation and only occasionally fails to produce the desired word. She has also practically regained whatever reading ability she formerly possessed.

Case II.—G. B., a little girl of five and a half years, referred to me from a neighboring city, December 14, 1911, by her attending physician, and admitted the same day to the Albany Hospital.

The past history presented nothing of immediate interest with the exception of the fact that there had been at various times a free discharge from both ears, but particularly from the left one.

The actual illness began, according to the mother's statement, November 29, 1911, with persistent and somewhat propulsive vomiting, headache localized especially over the left frontal region, fever, and severe left sided earache. Under the influence of absolute rest in bed, restricted diet, and gastro-intestinal antisepsis, the child's condition rapidly improved sufficiently to enable her to be up and about for a couple of days. This false recovery did not last long however, and on Saturday, December 8th, ten days later, another febrile attack appeared and the severe headache and vomiting returned. It was at this time that the mother first noticed that the child did not use the right hand, though she still preserved the power of moving the upper extremity both at the elbow and at the shoulder. The following day, December 10th, it was discovered that the child had lost entirely the power of speech. She had spoken very little since the onset of her illness, now she was totally unable to say anything. She would try now and then to articulate, but the word failed to appear. This condition of affairs continued, the disability of the right upper extremity gradually increased in severity and extent, when, on December 13th, four days after the onset of the brachial monoplegia, it became apparent that the child did not move the right leg. The mother also stated that she had observed, during the two or three days which preceded the patient's entrance into the hospital, occasional twitchings in the muscles of the

chin and in those of the right arm and leg. These spasmodic manifestations had never appeared on the left side of the body.

Physical examination shortly after admission disclosed the following clinical picture: Practically complete motor paralysis of both the upper and the lower extremity on the right side. The arm as a whole was decidedly atonic, and, when lifted away from the bed, it fell back as an inert mass the moment the supporting hand was withdrawn. Some residual motility existed however at the shoulder joint. The leg likewise was almost entirely disabled, but, unlike the arm, exhibited spastic rather than flaccid features. I may note, in passing, that this difference in muscle-tone between the two extremities was also very definite in Case I. The analogy, in this respect, between the two cases seemed very suggestive to me. There was no deviation of the tongue nor any trace of facial palsy as far as could be ascertained by direct elicitation of volitional efforts. Toward the close of our examination, however, the child being evidently annoyed and bored by the prolonged manipulations gave in to her feelings, and during the crying spell which followed it was noticed that the lower musculature of the right face was only imperfectly contracted and that the angle of the mouth drooped perceptibly. The radial and tricipital jerks were distinctly livelier on the right side than on the left. The same may be said of the ankle jerk. The knee jerk, on the contrary, was appreciably weaker on the right side than on the left. There was no ankle-clonus and only a doubtful Babinski reflex. The pupils were somewhat dilated, but equal, and yielded perfectly normal responses. No disorders of superficial or deep sensibility could be detected. With the exception of the little emotional outburst already referred to, the child's countenance remained placid and undisturbed throughout. In submitting to our examination she exhibited, for a child of her years, almost unnatural pliability, so much so, indeed, that I was led to inquire at once into the normal characteristics of her temperament. I soon learned from the mother that my little patient's actual mood was a complete reversal of her habitual disposition. The child's facial expression indicated indolence and disorientation rather than mental dulness. While nothing escaped her, she looked on apparently with complete indifference. Although not a word could be articulated, the little girl plainly showed that the sensory centers of speech were intact by correctly executing orders, and by nodding in the affirmative or negative in response to our persistent efforts at direct questioning. The child gave no indication of suffering from headache or from pain anywhere.

Careful examination of the eye-grounds showed no definite alteration. Urinalysis entirely negative. Examination of the blood revealed a definite leucocytosis. Although I have been unable to find this recorded in the history-chart, I recollect distinctly that the leucocyte count was approximately 15,000. The temperature at this time was 100 degrees, the pulse-rate 100 to 110.

While I was examining the child and reflecting upon the history obtained from the mother as to the manner in which this whole condition had appeared, all the features of my other patient's case promptly recurred

to my mind. The successive developments were so closely analogous in both cases, the clinical findings so nearly identical, that there seemed to me to be little doubt that, here again, the underlying condition must, almost necessarily, be cerebral abscess. I at once imparted my views to the mother and urged speedy intervention. I expected a request for delay, but obtained unhesitating and unreserved consent. The necessary preparations were made that same evening and the child was operated the following morning, December 15th, by Dr. Edgar A. Vander Veer. During the night, a very appreciable degree of mental dulness developed and repeated muscular twitchings were observed on the right side of the face and in the fingers of the right hand.

Operation.—The left cerebral hemisphere here again was exposed over the middle portion of the ascending parietal convolution. As the dura was incised, there was no evident bulging, but the underlying surface of the brain presented typical lesions of circumscribed suppurative meningo-encephalitis. Over an area approximately the size of a silver dollar, and corresponding to the inferior segment of the ascending parietal convolution and to the anterior lobule of the supra-marginal gyrus, the pia exhibited a milky opacity and delicate yellowish white streaks could be seen along the blood vessels. Above this main patch a very definite zone of greyish green discoloration about the size of a quarter occupied the actual cortical substance and yielded readily to the slightest pressure of the finger. In the immediate proximity of these lesions, the brain seemed distinctly oedematous. Exploration of the subcortical white matter failed to reveal the presence of an abscess-cavity. The wound was only partly closed and ample provision was made for free and prolonged drainage.

Subsequent History.—The child rallied remarkably well from the operation, regained consciousness without vomiting, and, to the great astonishment of all, partly recovered her speech during the afternoon of the same day. Encouraging as this unquestionably was, other manifestations of less favorable omen likewise appeared. The temperature shot up to 102 degrees, the pulse-rate jumped to 150 and 160, the child was seized with several severe attacks of Jacksonian epilepsy and the intervals between the attacks were punctuated by almost constant spasm of the right hand and wrist and by extreme restlessness. For two days I was tormented by the fear that we had spurred into wider activity a hitherto subacute and circumscribed meningo-encephalitis. During the following night the child had three Jacksonian seizures of exceptional severity. I saw them and they were typical. The convulsion invariably started with twitching at the right angle of the mouth, laryngeal spasm and exaggerated conjugate deviation of the head and eyes to the left; it then involved the musculature of the right arm producing marked flexion at the elbow and wrist and finally passed to the right leg which became rigidly extended with distinct oscillation at the ankle joint. The spasm was most marked and most persistent in the upper extremity and relatively slight in the lower extremity. The attacks never involved the left side of the body and were not attended with loss of consciousness.

In the course of the next day, December 16th, the little patient had three

more convulsions of the same type and of equal severity. Some return of voluntary motion was observed at the knee, but the child spoke less willingly than on the previous day and articulated less clearly. The pulse-rate had come down perceptibly and was now 120. The temperature likewise showed a distinct drop and towards evening was less than 100 degrees.

On the third day after operation, December 17th, the child had two severe Jacksonian seizures, but nevertheless looked better generally and her temperature curve almost reached the normal point at noon. The following day, December 18th, there was no convulsion until late in the evening, an interval of 26 hours having elapsed since the preceding one. Although fully as severe as the others, this convulsion fortunately was the last. From this time on we had no further cause for apprehension and the little patient's condition improved rapidly.

The motor power previously noted in the lower extremity steadily increased and by the sixth day after operation, December 20th, the child exhibited slight motion at the elbow joint. The temperature had become normal and practically remained so thereafter. The pulse-rate varied from 100 to 110. Although our little girl would not favor any of her medical attendants with actual proof of her regained faculty of speech, she spoke freely with her mother and with the nurse in charge. She seemed able to say practically all that she wanted and articulation was perfect. The very next day, December 21st, the child could move the lower extremity in practically all directions and had recovered sufficient motion in the upper extremity to swing it forward and upward in an attempt to shake hands with me. While voluntary motion had evidently returned in great part at both the shoulder and the elbow, the wrist was still markedly atonic and motor strength in the musculature of the hand and fingers was practically nil. The movements of the entire extremity, moreover, were distinctly ataxic. The little patient was in better mood on this occasion and for the first time consented to answer my questions directly. I could detect no trace of dysarthria, but occasionally a word would not come. A further gain was appreciable two days later, December 23rd, when on shaking hands with the child, I noticed that she was quite able to exert distinct pressure with the fingers. Movement at the wrist was now possible though still weak and the arm as a whole was less ataxic than before. After this time the residual defects cleared up rapidly, and by December 30th, two weeks after operation, the child had regained almost entirely the use of both the arm and leg. The various movements were executed without any difficulty, the grasp of the right hand was practically equal in strength to that of the left, there was hardly a trace of ataxia in the arm, and the child was perfectly able to feed herself. During the first few days after operation, there had been considerable oozing from the wound, but subsequently it subsided rapidly and at this time the dressings were barely tinged. Drainage was thereafter discontinued.

The child was kept under observation at the hospital for three weeks more, to ensure adequate after-care of the wound as well as to guard

against any possible secondary developments of an unfavorable nature. She spent most of her time investigating the various wards of the hospital and making numerous friends, and in discussing the relative merits of her toys and those of other patients of her years. I examined the child repeatedly during this time, and the day previous to her discharge from the hospital, January 21, 1912, she was submitted to a very complete program of physical and mental tests. I was quite unable to detect any evidence of residual defect. She was seen again only a short time ago and her condition was found to have remained perfectly satisfactory.

Thus, as a symptom common to both the cases reported, we have a hemiplegia exhibiting a mode of development which is so distinctive, that it possesses, I believe, almost specific diagnostic significance. In the first case I utterly failed to correctly interpret this progressive hemiplegia because an adequate description of it is totally wanting in text-books. The term progressive hemiplegia is closely identified with the symptomatology either of cerebral thrombosis or of cerebral tumor. These classic notions have gained such firm foothold that they continue to guide our reasoning for a long time, and if we ultimately abandon them, it is almost with regret. Knowing as I do that many gliomata produce no definite disorders until hemorrhages occur within them, it was perfectly simple to suppose that the sudden appearance of a right brachial monoplegia was due to a hemorrhage within the supposed neoplasm, and that the associated monoplegia which subsequently developed was due either to pressure-oedema or to further hemorrhage. Into this error I was greatly assisted by the negative blood findings, by the comparative absence of fever, and by the presence of well-marked choked disc which certainly represents a rather uncommon manifestation of abscess.

Personal experiences of this sort almost invariably bring back memories of events long since forgotten. When my error in diagnosis became evident, I at once recollected the case of a young man whom I had seen and examined in the service of one of the most distinguished clinicians in Germany. This patient had presented a progressive hemiplegia of the very same type. The paralysis, in his case, had involved first the left facial musculature, then the left upper and finally the left lower extremity. It had taken six or seven days for the hemiplegia to become complete. There was no fever, but the patient complained bitterly of headache and vomited almost constantly. A history of syphilis having been obtained, the condition was regarded as one of cerebral thrombosis due to syphilitic endarteritis and the

patient was fed colossal doses of mercury and potassium iodide. Convulsions subsequently appeared, coma developed, and the patient died three weeks after the onset of his paralytic disorder. At the autopsy every one was surprised when a voluminous abscess of the right parietal lobe was incised.

The clinical evolution of the hemiplegia of cerebral abscess now appeared to me to be so well characterized that I was determined henceforth not to let it pass unrecognized. When I was first asked to see Case II, and learned the particulars of the case from the attending physician, I directed him to have the child transported at once to the Albany Hospital. I had my misgivings regarding the probable nature of the affection and they were confirmed without delay. The child was seen in the evening of the same day and was operated the very next morning. With the typical history already detailed regarding the development of the motor paralysis, the decided febrile reaction, the well-marked leucocytosis, and the additional information of previously existing otorrhea, I felt convinced that we had to do with an abscess of the brain. An abscess, in the strict sense of the word, did not exist; this error, however, I do not regard as being properly speaking an error. We found a very definite patch of meningo-encephalitis which, after all, simply represents the first stage of abscess formation. Had we waited for further symptoms to accentuate the necessity of intervention, we would undoubtedly have been enabled to actually demonstrate an abscess, but I fear that to-day I would have the chagrin of describing a residual palsy and perhaps also a speech defect, instead of presenting a little patient who has integrally recovered her functional activities.

To return to the significance of progressive hemiplegia in diagnosis, it is evident that there is no necessity of rejecting the term, and that it remains applicable to the symptomatology of cerebral tumor and vascular lesions as well as to that of cerebral abscess. It is equally plain, however, that in arriving at a differential diagnosis between these several conditions, we cannot use the term progressive hemiplegia indifferently and without qualifying it additionally. It becomes absolutely indispensable that we correctly estimate the degree of this progressiveness. While it is true that in cerebral thrombosis a hemiplegia may appear very gradually, one limb becoming disabled after the other, so that it may even take several hours for the hemiplegia

to mature, the clinical picture of the symptom is complete in less than twenty-four hours in the great majority of cases. It has been said that cerebral hemorrhage may occasionally exhibit practically the same features. This I am unwilling to believe. In cerebral tumor, the paralytic symptom which appears first as a monoplegia remains stationary for a long time, then an associated monoplegia slowly develops, and if a completed hemiplegia is to supervene, it usually requires a period of weeks and even months before it becomes manifest. Thus, in point of chronologic evolution, the hemiplegia of cerebral abscess is intermediate to that of cerebral thrombosis and that of cerebral tumor. It demands for its completion a period which usually varies from six to ten days, although it may take a longer time to develop and in rare cases appear more rapidly. It may begin either in the face or in the upper or lower extremity. From the face it spreads to the arm and then to the leg and vice versa. When it first appears in the arm, it involves next either the face or the leg. In the majority of the cases reported during the last few years, the initial paralysis has first appeared in the arm and then extended to the leg; the face being involved much later and to a lesser extent. I cannot be led into the belief that this type of hemiplegia can develop under circumstances other than those which govern and accompany the formation of a localized encephalitic lesion. This form of hemiplegia, I repeat, is no new symptom, nor was it meant to present it as such, but I do know that a comprehensive knowledge of this symptom is not obtainable from text-books and that its clinical significance is widely ignored. There are a considerable number of cases on record in which this hemiplegia is typically described. In some of them, other symptoms clearly pointed to abscess of the brain, operative treatment was resorted to and was followed by recovery in the majority of instances. In other cases, some emanating from sources too reputable to divulge, no attempt at surgical relief was made, but valuable contributions to our knowledge of the pathogeny and pathologic histology of cerebral abscess undoubtedly resulted. It is difficult to understand why some of these patients were not given the benefit of surgical intervention, if it be not the very fact that the hemiplegia of cerebral abscess is insufficiently understood.

Of course, a hemiplegia is not a constant manifestation of abscess of the brain, although it is certainly more common than

is generally supposed. My feeling in the matter is that when it does present, it should be recognized without delay in view of its important bearing on successful intervention. In relatively typical cases of cerebral abscess, other manifestations such as febrile disturbances, blood-changes, disorders of the sensory speech centers, the cerebellar syndrome, etc., will quite suffice to render the diagnosis apparent, particularly when a coexisting history of previous injury or otitis media obtains. Under those circumstances, hemiplegia or no hemiplegia, its presence is not indispensable to a correct diagnosis. It is in the atypical cases of cerebral abscess that the chief difficulties arise, in cases of gradually increasing cerebral disorder of obscure nature in which repeated questioning fails to show that the condition developed as the result of head injury or of pre-existing aural affection, and where the most scrupulous physical examination itself yields but negative findings. Under these conditions, the subsequent appearance of the type of hemiplegia just described practically suffices, I believe, to ensure diagnosis. It should further be stated that it is exactly in this category of cases that the hemiplegic syndrome most frequently develops. It must not be forgotten, in this connection, that cerebellar lesions, and among them cerebellar abscess, may determine a more or less well-defined hemiplegia. This hemiplegia may be either homolateral or heterolateral. When homolateral, the condition is one of atony and ataxia rather than one of actual motor weakness and the tendon reflexes may be either hypo-active or, more rarely, apparently wanting entirely. When it is a heterolateral hemiplegia which presents, it is due to compression of the pyramidal tract either in the pons or medulla, the paralysis is distinctly spastic in type and associated with exaggerated reflex activity. Moreover, whichever type of hemiplegia appears, this hemiplegia will not be constituted by the intervallary superposition of one monoplegia upon the other as is the case with the form of hemiplegia described above. There may be progressiveness in intensity but not in distribution; the unilateral atony or rigidity will usually involve the various segments evenly from the very outset. Finally, a cerebellar lesion which is of sufficient size to determine either a homolateral or a heterolateral hemiplegia, will, in the majority of cases, have given rise likewise to cerebellar ataxia, nystagmus and other symptoms of cerebellar disease. For all these reasons, it would seem unlikely that real

difficulty could arise in distinguishing the hemiplegia of cerebral abscess from the hemiplegia of cerebellar abscess.

As regards the differential diagnosis of cerebral abscess associated with hemiplegia from other conditions producing a unilateral paralysis, it has already been sufficiently shown that, in point of time required for its development, this hemiplegia itself differs materially from that of either cerebral thrombosis or cerebral tumor. Of other points of differentiation between the three conditions, relatively few need be considered.

In cerebral thrombosis, headache is not very uncommon and convulsive seizures, even typical Jacksonian epilepsy, have been repeatedly observed. There is no febrile reaction, it is true, but we have seen that this is frequently wanting in abscess of the brain. Thus, real difficulties may arise, particularly if the condition presents in a young adult in which case we may easily be led to formulate a diagnosis of thrombosis due to syphilitic endarteritis. A history of specific infection may or may not be obtainable. Under such circumstances, careful blood examination may reveal a positive Wassermann-Noguchi reaction or the polymorphonuclear cell increase and leucocytosis suggestive of abscess as the case may be. The cerebro-spinal fluid likewise may be examined; it should show the presence of a distinct lymphocytosis if the affection be syphilitic, whereas it will be negative usually in cerebral abscess. If the latter condition be strongly suspected, it is probably preferable to refrain from lumbar puncture. Oppenheim, and more recently Taylor, have strongly insisted upon the danger of practising lumbar puncture in cases of cerebral abscess, lest the sudden relief of pressure determine its rupture into the ventricle or upon the surface. I have twice refused to perform this operation upon patients whom I suspected of having this condition. Both patients died, but the inability to secure an autopsy did not allow me to ascertain the nature of the lesion in either case. Coma may or may not be present in cerebral thrombosis, but when it occurs it does so at the very onset and usually disappears promptly. In cerebral abscess, on the contrary, coma is an ante-mortem manifestation.

Between cerebral abscess and cerebral tumor, differential diagnosis is still more difficult and sometimes impossible. Here again fever as an element in diagnosis is only of relative value; its presence repeatedly ascertained will militate strongly in favor of abscess, while its absence will have no significance either one

way or the other. In a general way, well-marked choked disc will indicate tumor rather than abscess, but there are many exceptions to this rule, and in the first case reported in this communication, it was this physical sign which was most potent in leading me to formulate the diagnosis of cerebral tumor. Careful and repeated examinations of the blood should never be forgotten in these cases; while blood-changes are not constant in abscess of the brain, they are sufficiently common and distinctive to be relied upon when present. As far as I know, cerebral tumor is not accompanied by any definite alteration in the blood-picture. Changes in the general mood and disposition of the patient occur both in tumor and in abscess, but I have gained the impression that they appear much earlier in abscess than in tumor, and this independently of the differences which exist between the two conditions as regards the relative rapidity of their general clinical course. In other words, I believe that, setting aside the effect produced by the direct involvement of the sensory speech area, patients with abscess show decided impairment of intellectual acuity long before any extensive tissue-destruction has occurred, whereas, in patients with cerebral tumor, these changes become manifest only when the neoplasm has attained considerable proportions and has materially interfered with the adequate vascular irrigation of the cortical centers. The early occurrence of this psychic inhibition in abscess may well be due to the toxic influence of the lesion upon the cerebral cortex, although it must be admitted that the actual mechanism involved still remains a matter of pure conjecture. Convulsive seizures are far more common in tumor than in abscess, they frequently exhibit the periodicity of genuine epilepsy, and in the majority of instances greatly predominate over the paralytic disorders. Cerebral abscess, on the contrary, is characterized by an almost complete reversal of the formula. At any rate, the spasmoid manifestations follow rather than precede the onset of paralysis. While in some cases, cerebral abscess may assume a particularly chronic course, and present even more than one stage of remission, in by far the greater number of cases, the condition runs a decidedly more rapid cycle than that of cerebral tumor. Finally, it may be said that when we have definitely localizing symptoms, the necessity of absolute distinction between abscess and tumor is perhaps not so imperative, and that the one consideration which should outweigh all others is the desirability of

affording, in either event, surgical relief at the earliest possible moment.

To attempt a differential diagnosis between cerebral abscess and circumscribed suppurative meningo-encephalitis appears to me not only superfluous, but illogic, to say the least. It hardly seems necessary indeed, or even practical, to establish a distinction between two conditions which do not represent two different lesions, but in reality two different stages of one and the same lesion. Cerebral abscess may justly be regarded as a circumscribed suppurative encephalitis, or meningo-encephalitis, which has reached maturity. While the diagnosis between the two may be made in some text-books, its clinical realization is quite impossible.

There is no intention of taking up the differentiation of cerebral abscess, in all its possible localizations, from the various intracranial lesions which may simulate it, as this would necessarily lead us into domains which greatly outdistance the scope of our actual subject. Reference has already been made to the different endocranial complications which may appear in the course of otitis media, to the frequent difficulty or impossibility of clearly differentiating them from one another, and to the relative unimportance of this distinction in view of the fact that all of them demand speedy intervention. The diagnosis and differential diagnosis of these various affections has been so exhaustively covered in recent years that additional discussion here is quite unnecessary. A word, however, regarding the association of cerebral abscess and meningitis cannot well be omitted. The frequent coexistence of the two lesions, although known for many years, has been insufficiently emphasized and is habitually forgotten in the analysis of the symptoms which appear in the course of cerebral abscess. This meningitis may be either diffuse or circumscribed. The former is rare except as a late and rapidly fatal secondary development; the latter is extremely common, if not constant. When difficulties arise in distinguishing clinically between cerebral abscess and diffuse meningitis, examination of the cerebro-spinal fluid will almost invariably yield positive findings if it be the latter condition which underlies the clinical manifestations. As has already been stated, however, lumbar puncture is not to be undertaken in such cases unless it is the only available means of diagnosis, owing to the dangers it presents when a cerebral abscess exists. If the pro-

cedure be resorted to, all possible precautions should be taken; the patient should be placed in the recumbent posture and a too rapid outflow of the fluid under greatly increased tension should be avoided by introducing a fine silver wire for a certain distance into the lumen of the needle as soon as the fluid escapes freely. As regards the other form of meningitis, the circumscribed meningitis, it may be regarded as an almost constantly associated lesion in cerebral abscess. While the clinical delimitation of its symptoms is usually impossible, the knowledge of its existence becomes of great practical importance in the course of surgical intervention, as its localization can be relied upon for the correct orientation of further operative manipulations.

The symptoms upon which greatest reliance can be placed in reaching an early diagnosis of cerebral abscess, and the clinical developments which furnish the strongest indications for operative intervention may be jointly summarized in the following considerations:

(1) Of general symptoms, the febrile reaction when present, the early appearance of psychic manifestations such as have been previously described, persistent headache frequently of a dull and constricting character, changes in the blood-picture, and the slowing of the pulse-rate, are by far the most important. Insufficient in themselves to warrant surgical interference, they acquire considerable value in the presence of a previous history of traumatism or of otitis media; when associated with local symptoms, they complete the indications for operation.

(2) The appearance of symptoms of focal cerebral disorder are of the very greatest importance both for topical diagnosis and for well-directed and intelligent operative procedure. It is only when taken in conjunction with the general symptoms mentioned above, however, that they clearly point to cerebral abscess. Here as elsewhere, the well-known rule formulated by competent and experienced clinicians is to be applied. A diagnosis should never be made from one symptom alone, but from a careful survey of all the symptoms present, and particularly from the predominance of certain of them as well as from the mode and rapidity of their development. It is in this respect that the hemiplegia which has furnished the essential motive of this communication assumes such great significance. This hemiplegia represents more than a symptom, it almost constitutes a syndrome. It may appear either early or very late in the course of

the disease. When it occurs in the early stages, it indicates that the Rolandic area has probably been primarily involved and it is here that the symptom attains its maximum diagnostic value. It enables the surgeon to intervene during the stage of initial encephalitis, before the actual formation of an abscess-cavity and consequently before any very material damage has been done to the brain-centers. Under such circumstances, the chances of obtaining remarkable restoration of function are appreciably increased. When the progressive hemiplegia is a late manifestation of cerebral abscess, it is due, evidently, to the secondary extension into the subcortex of the Rolandic area, of an already matured abscess originating from some adjacent region of the brain, as, for instance, from the frontal lobe or the temporal lobe. The hemiplegia still retains its full significance, it still remains an imperative indication for intervention, but, of course, as considerable destruction has already occurred, complete retrocession of the paralytic disorders can hardly be expected.

(3) The occurrence, at any time in life, of a hemiplegia which starts as a monoplegia and requires several days for its full development, especially if it be associated with either fever, persistent headache, hebetude, or distinct blood-changes, with any or all of them, supplies all the indications necessary for immediate surgical intervention.

(4) The apoplectiform onset, in a young adult who is neither syphilitic, nor tuberculous, nor alcoholic, of a localized paralysis associated with convulsive manifestations and accompanied by fever, strongly indicates cerebral abscess and justifies, in the great majority of instances, speedy operative measures.

(5) The more or less sudden appearance of aphasic disorders or of a monoplegia in a subject previously suffering from otitis media, implies almost necessarily the existence of cerebral abscess and practically suffices to warrant surgical treatment.

There is only one treatment of value in abscess of the brain and that is surgical intervention. The earlier a diagnosis is reached and the more promptly operative measures are resorted to, the greater will be, naturally, the chances of obtaining favorable results. The careful statistics recently tabulated by Mac-ewen, Oppenheim, Körner, Broca, Krause, Starr, and others, show that operation has been followed by recovery in more than fifty per cent of the cases. While it is true that intervention upon the brain is a serious matter and that undue haste is never

justifiable, hesitation and unnecessary delay are prone to be followed by disastrous results. In the presence of fairly well-defined general symptoms and of suggestive antecedents, the appearance of a localizing symptom should be the signal for operative preparations. If it be the progressive hemiplegia described in this communication which constitutes the focal manifestation, one should not wait for this hemiplegia to mature or for coma to supervene. The moment a contiguous monoplegia becomes added to the initial monoplegia, the hour of intervention is at hand. In the great majority of instances, the findings will legitimate the course adopted. Possibly, a few unnecessary operations may be recorded, but it has only very rarely happened that a patient has died as the result of such intervention at the hands of a careful and competent surgeon. It does happen commonly enough that the lesion diagnosed is not to be found, and that a focus of an entirely different nature is discovered or else that no focus whatever can be demonstrated. There are many such cases on record and some of them have been furnished by perfectly able and even distinguished observers. As a rule, these patients have fared very well and have recovered not only from the shock of the operation, but also from the serious manifestations which necessitated it. Some of the most glorious achievements in the annals of brain surgery belong under this heading.

If on the one hand it behooves that undue delay be avoided, it is equally important, on the other hand, that intervention be not abandoned because of the exceptional severity of the clinical picture. The presence of coma, or the apparent development of grave complications such as diffuse suppurative meningitis, sinus thrombosis, etc., does not contraindicate operative measures. It is well known that even under such discouraging circumstances remarkable results have not infrequently been obtained. Our first case is an excellent illustration of this fact.

While it is not intended to discuss the actual surgical features of the treatment of cerebral abscess, there are, from a neurologic standpoint, certain associated considerations which are of sufficient importance to be emphasized in this connection. The first and foremost prerequisite to rational and successful intervention upon the brain is the accurate preliminary determination on the skull of the point at which the supposed lesion is situated. This should be done in accordance with the rules of craniotopography

formulated by Poirier, Kocher, Krause, Broca and others. Operation on the brain is too serious a matter to be undertaken in haphazard fashion, and it is nothing short of criminal to rest satisfied with only approximate markings as the starting point of interventions which already present sufficient difficulties when the markings have been carefully and repeatedly controlled.

After sufficient bone has been removed to permit adequate incision of the dura, the next step should be to ascertain the presence or absence of the localized meningitis already referred to under diagnosis. If a cerebral abscess exists and its localization has been accurately diagnosticated, this meningitis will rarely be wanting; once found, it should constitute the chief guide both as to the direction in which it may be necessary to enlarge the incision and as regards the subsequent exploration of the subcortical white matter. When a definite abscess cavity has been located, it is indispensable that it be sufficiently incised to allow free evacuation of the contained pus. There is decided advantage, when such an abscess cavity occupies the Rolandic area, in practising this incision as far posteriorly as possible in order to minimize additional traumatism to the intracortical motor apparatus. Moreover, this precaution will likewise favor subsequent drainage inasmuch as the patient will lie the greater part of the time in the dorsal decubitus. It is extremely important that ample drainage be assured and that it be maintained during a considerable period. Another point in the after-treatment of cerebral abscess which should be emphasized, is the desirability of changing the dressings long before the conventional time, should the patient's general condition reveal unsatisfactory features such as a return of mental torpor, a rise in temperature, etc. I have sometimes felt that the dressings were too tight or that drainage was imperfect, and usually the change in the dressings was followed by prompt amelioration.

MACULAR INFLAMMATION.

Read before the Fourth District Branch of the Medical Society of the State of New York, October 8, 1912.

By JOHN J. O'BRIEN, M. D.,

Schenectady, N. Y.

In diseases of the retina, the location is of great importance. A lesion above, below, or to the nasal side of the disk, and of which the patient even has no knowledge, if in the macula lutea, is fatal to direct vision. The acuity of the eye is at once reduced from $\frac{1}{8}$ or better to $\frac{1}{100}$, or $\frac{1}{200}$, and the ability to read lost. With these facts in mind, the three cases reported may not be without some value.

The first week in September, 1910, C—, a street railroad man, 24 years old, discovered that all objects seen by his left eye were distorted. Above the plane of his eye the images were larger, below, smaller than as seen with his right eye. This came suddenly with much blurring of vision. These were all the symptoms. On the 11th, the speaker examined the eye. The external appearance and movements were perfect. Vision $\frac{1}{8}$, J. 14. The cornea and media were clear, pupil active, disk, vessels and fundus negative, except that above and encroaching upon the macula lutea there was a deep red spot about the size of the optic papilla. It was somewhat rectangular, longer vertically than transversely, with a scarcely measurable elevation. The patient was free from syphilitic taint, yet to make assurance doubly sure was put on mercury and potassium iodide to saturation. The lesion was stationary. C— had an uncle in New York City. This uncle placed him under the care of an eminent specialist in the latter city. This gentleman continued the anti-syphilitic treatment. In December there was no change that was appreciable to me. Shortly after the eye was removed. The case is reported in the J. A. M. A., July 15, 1911, page 217; where it is stated that the lesion was a sarcoma, and the smallest on record.

The second case to which your attention is invited occurred in a patient of thirty. This also developed suddenly, and was also in the left eye. His complaint was that everything looked at with this eye was markedly blurred. The vision was $\frac{1}{8}$, J. 12. In location and appearance the lesion was similar to that in the first case. This was June 1, 1911. In January of this

year, the vision was $\frac{1}{2}$, partly J. 2, and the lesion, macroscopically, had almost disappeared.

About March 1, 1912, a similar condition abruptly developed in a railroad man 24 years old. Here the only symptom was blurring in the left eye. Vision $\frac{1}{2}$, J. 4. The ophthalmoscope revealed a reddish brown spot below and to the inner side of the macula lutea but encroaching on the latter. It was not so large as the lesions in the prior cases, was somewhat round but otherwise similar. By the middle of May the vision was $\frac{1}{2}$, J. 2. Two weeks later it again fell. From this on improvement was continuous. July 1st, the inflammation had subsided, the vision being $\frac{1}{2}$, J. 1. In neither of these cases was there syphilis.

The etiological factor is somewhat illuminated by the recent histories of the patients. Even so, the probable explanation must necessarily be more or less speculative. Our city abounds in interurban trolley cars carrying headlights of dazzling brilliancy. The patients had been in repeated close relation with these lights without protection. The refractive media of the eyes concentrating these powerful light rays on the most delicate part of the retina resulted in trauma. In the macula lutea, you will recall, the inner parts of the retina are absent, the latter being reduced to the cone and pigmentary layers. It is, therefore, the most vulnerable. The hyperstimulation increased the blood supply in the underlying choroid, this modified by the increase in the retinal pigment combined to produce the special picture seen by the ophthalmoscope. With the latter the most minute changes can be at once detected. The lesions, therefore, being at all times readily accessible to examination, there is neither cause for haste nor alarm. Should the disease, instead of responding to therapy, show unmistakable signs of growth, its complete removal is quickly accomplished. That the macula in the second case did not return to normal is the result of increase in the fibrous elements of the choroid, also the pigment in the retina. This was due to the longer continued irritation than in the third case, where the shorter course of the inflammation left no macroscopic change with complete restoration of function. The weakness of this hypothesis lies in that the right eyes were equally exposed, yet were unharmed. We are confounded by this daily. The rheumatic poison, for instance, attacks the right but why not the left shoulder? The

syphilitic poison involves the right iris, why not the left? It has equal access to both.

The treatment consisted of putting the eyes at rest with atropine, but not too long continued so as not to excite conjunctivitis. This with the exhibition of iodine in its various forms, and every two or three weeks small doses of sodium salicylate and bicarbonate of potassium three times daily for ten to fifteen doses to increase elimination produced the happy result measured by the useful vision in the one case, and splendid vision in the other.

Editorial

There are several states of life in which etiquette gives a consequence to him who follows it. A tradesman, for instance, to appear as he ought, should have his head shaved and wear a round wig; physicians and surgeons too should do the same. Who, in this enlightened age, would put the least confidence in a physician who wears his own hair, were it the finest in the world? A wig, certainly, can't give him science, but it gives him the appearance, and that is everything now-a-days. Strip a physician of his wig, gold-headed cane, ruffles, and diamond ring: what will he have left?

—*Pogonologia, or a Philosophical and Historical Essay on Beards.*



To Our Subscribers. The attention of the ANNALS has recently been called by the Post Office Department to the following amendment of the Postal Laws and Regulations in relation to subscriptions:

The right of publishers to extend in good faith credit on subscriptions is recognized and will not be abridged, and although all subscriptions are regarded as expiring with the period for which they were obtained, nevertheless, in order to give an opportunity to secure renewals, copies of their publications will be accepted for mailing as to subscribers at the usual second-class rates of postage for a period of one year from the date of expiration; but copies sent to persons after one year from the date of the expiration of their subscriptions, unless such subscriptions be expressly renewed for a definite time, together with an actual payment of subscription or a *bona fide* promise of payment, will not be accepted at the pound rate, but will be accepted at the transient second-class rate of one cent for each four ounces or fraction thereof, prepaid by stamps affixed.

We ask our subscribers to carefully note the import of this rule of the Department. The ANNALS has depended so fully upon the good-will of its readers that no attempt has been made to crowd them for the payment of subscription, and from year to year those in arrears have met their obligations. We do not ignore the fact that prompt payments would facilitate our work and would permit a much more generous use of printer's ink in the way of increased number of pages and wider extent of illustrations, but we have been content to carry on the ANNALS in what has seemed to be the spirit of the support that it has received.

Public Health

Edited by Joseph D. Craig, M. D.

ABSTRACT OF VITAL STATISTICS, NOVEMBER, 1912.

DEPARTMENT OF HEALTH, ALBANY, N. Y.

Deaths.

Consumption	22
Typhoid fever	1
Scarlet fever	0
Measles	0
Whooping-cough	0
Diphtheria and croup	2
Grippe	1
Diarrheal Disease	4
Pneumonia	15
Broncho-pneumonia	2
Bright's disease	10
Apoplexy	13
Cancer	12
Accidents and violence	10
Deaths over 70 years	25
Deaths under 1 year	20
 Total deaths	164
Death rate	19.94
Death rate less non-residents	16.41

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital	7	10
Albany Orphan Asylum	0	0
Child's Hospital	0	2
County House	4	2

Home for the Friendless	0	0
Homeopathic Hospital	4	1
Hospital for Incurables	1	0
House of Good Shepherd	2	0
House of Shelter	0	0
Little Sisters of the Poor	3	0
Public places	3	2
Penitentiary	0	0
Sacred Heart Convent	0	0
St. Margaret's House	1	2
St. Peter's Hospital	6	7
Austin Maternity Hospital	3	2
Albany Hospital, Tuberculosis Pavilion	2	1
Labor Pavilion	0	0
<hr/>		
Totals	36	29
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Births	159	
Still births	10	
Premature births	3	

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

Typhoid fever	1
Scarlet fever	0
Diphtheria and croup	44
Chickenpox	6
Measles	60
Smallpox	1
Whooping-cough	2
Consumption	30
<hr/>	
Total	144

Contagious Disease in Relation to Public Schools.

	Reported D.
Public School No. 1.....	1
Public School No. 8.....	1
Public School No. 14.....	2
Public School No. 17.....	2
Public School No. 20.....	3
Public School No. 21.....	3
Public School No. 22.....	3
St. Patrick's School	1
St. Ann's School	2
Lady Help of Christians School	2
St. John's School	1
St. Anthony's School	1

Number of days quarantine for diphtheria:

Longest.....	25	Shortest.....	8	Average.....	14 12-30
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Number of days quarantine for scarlet fever:

Longest.....	33	Shortest.....	33	Average.....	33
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Fumigations:

Houses	58	Rooms	260
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Cases of diphtheria reported	44
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Cases of diphtheria in which antitoxin was used.....	44
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Cases in which antitoxin was not used.....	0
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Deaths after use of antitoxin.....	1
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BENDER LABORATORY REPORT ON TUBERCULOSIS.

Positive	10
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Negative	20
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Total	30
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Living cases on record November 1, 1912.....	304
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Cases reported during November:

By card	21
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Dead cases by certificate	8
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—	29
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Total	333
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Dead cases previously reported	14
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Dead cases not previously reported.....	3
---	---

Recovered	0
-----------------	---

Removed	4
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—	26
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Living cases on record December 1, 1912.....	307
--	-----

Total tuberculosis death certificates filed during November.....	22
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Out of town cases dying in Albany:

Albany Hospital Camp	2
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County Hospital	0
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Austin Maternity Hospital	1
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—	3
---	---

Net city tuberculosis deaths	19
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REPORT OF VISITING TUBERCULOSIS NURSE.

Number of new cases assigned	10
------------------------------------	----

Number of old cases investigated.....	28
---------------------------------------	----

Total	38
-------------	----

Disposition of old and new cases:

Died	5
Referred to Hospital	2
Went to country	1
Not located	1
Remaining under general Albany Guild Nurse.....	29
Number of visits made	112

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive	35
Initial negative	122
Release positive	30
Release negative	84
Failed	17
Total	288

Test of sputum for tuberculosis:

Initial positive	30
Initial negative	10
Failed	20
Total	60

BUREAU OF MARKETS.

Market inspections	50
Public market inspections	9
Hide house inspections	3
Pork packing house inspections	2

MISCELLANEOUS.

Mercantile certificates issued to children.....	24
Factory certificates issued to children.....	9
Children's birth records on file.....	33
Number of written complaints of nuisances.....	29
Privy vaults	1
Closets	2
Plumbing	11
Other miscellaneous complaints	15
Cases assigned to health physicians	80
Calls made	158
Number of dead animals removed.....	271

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

MEMORIAL MEETING—C. E. CARRUTH, M. D.

There was a special meeting of the Medical Society of the County of Albany held at the City Hall, Cohoes, on the evening of September 11, 1912, to take action upon the death of Dr. C. E. Carruth.

Meeting was called to order by President Neuman. Those present were Drs. Bailey, Root, Hinman, Keough, Corning, Ward, Conway, Bibby, J. N. Vander Veer, Bedell, Neuman, Draper, Mitchell, J. L. Archambault, Gillen, McGarahan, Archibald, Gutmann, G. W. Papen, Jr., Lanahan, Druce.

Dr. NEUMAN made a few remarks concerning the life and work of Dr. Carruth and then called upon some of Dr. Carruth's fellow townsmen who knew him more intimately.

Dr. J. L. ARCHAMBAULT said: Mr. President, you have caused much satisfaction and it has been considered very praiseworthy that it came to your mind to hold this Memorial Meeting here, in Cohoes, the city in which Dr. Carruth spent the best days of his activity. By your thoughtfulness in so doing you have honored the local profession of which he was a most esteemed member, and our city of which he was the chief magistrate. Although only of recent years a member of the Albany County Medical Society, there is no tribute you could render him of which he is not fully deserving.

As chief executive of our city, Dr. Carruth was a dignified and greatly respected incumbent of the office.

In his professional career his labors knew no bound, and hardly any limit, whether in ministrations to his large practice, whether in his service as attending physician to our hospital. Disabled as he was in the last few years, he still never spared himself, and especially his charity work never went wanting.

As a physician in his relations with his colleagues he was known for his very high ideals, he was in particular so careful never to offend that even the ill-disposed could not easily offend him; in his relations with his practice all his patients loved him and were his friends as much as his patients; in his social relations with the public at large none but the kindest words were ever and everywhere spoken of him.

In our days of agnosticism he was a true Christian, and worked zealously for the church to which he belonged.

It is beyond our province to consider him within the sanctuary of the home, but we know that he was a most honorable man and a perfect citizen. It is but a common truth to say that the public life of a man is but the exemplification and resplendency of what he is in private; what shining lofty worthiness is attached to Dr. Carruth's name!

For the welfare of the city, for the sake of a straightforward administration, for the advancement of hygienic problems, for the good of suf-

ferring humanity, for the furtherance of good fellowship among the medical fraternity it might have been well not to see the cycle of this noble existence yet closed, but, God knew best!

Dr. J. H. MITCHELL: Mr. President, I do not feel that I would be doing my duty without paying my tribute to Dr. Carruth. I knew Dr. Carruth for twenty years. He was a typical physician of the old school of general practitioners. He worked entirely for his patients and his family. He treated all diseases and all people. No one was turned away, rich or poor, night or day. His remuneration was not sufficient for his work. He would go to the farthest end of the city at any time and in all weathers for the poorest patient. And all this with a heart which for the last two years was doing only half its work. The mitral valves were in such a condition that every effort of going up hill or down hill made it churn and churn till it eventually developed into Bright's disease and he passed from us after three months of greatest suffering. When he knew death could not be far off he never lost courage and always smiled when you entered his room. He gradually became weaker and weaker till the end came. What a strength of character to be so pleasant and satisfied. He was admired by every citizen of Cohoes and loved dearly by all his patients. He was honest to himself and his patients, true to himself, his family and his God.

It was moved and seconded that a committee be appointed to draw suitable resolution upon the death of Dr. Carruth. Passed.

President NEUMAN appointed Drs. Root, J. L. Archambault, and J. H. Mitchell. The following resolution was drawn by this committee.

WHEREAS, By the death of Dr. Clarence Edgar Carruth the Albany County Medical Society has lost a valuable member, a faithful practitioner and an honored confrere, who, by his Christian life, his unceasing devotion to duty as a physician, citizen and chief executive officer of the city of Cohoes, has left a noble example, worthy of emulation by all who love and admire true manhood in professional, public and private life;

Resolved, That we deeply mourn the loss of our brother physician, who was an honored citizen and a faithful public servant.

Resolved, That this Society extend its condolence to the bereaved family in their sad affliction, and that this resolution be placed upon the minutes of the Society, printed in the MEDICAL ANNALS, and that a copy be sent to the family of the deceased.

(Signed) ARTHUR G. ROOT,
 J. L. ARCHAMBAULT,
 J. H. MITCHELL.
EDWIN L. DRAPER, Secretary.

Medical News

THE ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR NOVEMBER, 1912.—Number of new cases during month, 134. Classified as follows: Dispensary patients receiving home care, 18; district cases reported by health physicians, 3; charity cases reported by other physicians, 39; moderate income patients, 69; metropolitan patients, 5; old cases still under treatment, 83; total number of cases under nursing care during month, 217. Classification of diseases for the new cases: Medical, 31; surgical, 5; gynecological, 1; obstetrical under professional care—mothers, 40; infants, 40; eye and ear, 2; skin, 0; throat and nose, 1; dental, 0; infectious diseases in the medical list, 14; surgical list, 0. Disposition: Removed to hospitals, 6; deaths, 5; discharged cured, 92; improved, 12; unimproved, 6; number of patients still remaining under care, 96.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 5; nurses in attendance, 5; patients carried over from last month, 2; new patients during month, 5; patients discharged, 6; visits by head obstetrician, 4; visits by attending obstetrician, 3; visits by students, 49; visits by nurses, 66; total number of visits for this department, 122.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,278; for professional supervision of convalescents, 558; total number of visits, 1,836. Cases reported to the Guild by two health physicians and thirty-nine other physicians; graduate nurses 9 and pupil nurses 7 on duty.

Dispensary Report.—Number of clinics held, 88; new patients, 146; old patients, 267; total number of patients treated during month, 413. Classification of clinics held: Surgical, 10; nose and throat, 8; eye and ear, 16; skin and genito-urinary, 7; medical, 11; lung, 14; dental, 1; nervous, 0; stomach, 0; children, 12; gynecological, 9.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.—The annual meeting of the Medical Society of the County of Rensselaer was held at the County Court House, Troy, N. Y., on Wednesday evening, December 11, at 8:15 p. m. The following papers were presented.

“Feet and Their Care,” Dr. Reginald H. Sayre, New York City.

“The Mission of Modern Medicine,” Dr. John B. Roberts, Philadelphia, Pa.

“The Elementary Principles and Social Bearing of Eugenics,” Dr. H. E. Jordan, University of Virginia.

MEDICAL SOCIETY OF THE STATE OF NEW YORK, COMMITTEE ON PRIZE ESSAYS.—The committee in charge of the Merritt H. Cash \$100.00 and Lucien Howe \$100.00 Prize Fund of the Medical Society of the State of New York, offer the suggestive, but not arbitrary, subjects upon which the competitors may write their essays:

1. Diagnosis and treatment of syphilis of the central nervous system.
2. The present status of serum therapy.
3. Latest research relative to cancer.

4. The order and sequence of vascular and cardiac disease.
5. The function of the State in limiting the increase of imbeciles and degenerates.

6. Surgery in functional and organic disorders of the stomach.

The essays must be in the hands of the Chairman of the Committee, Dr. Albert Vander Veer, 28 Eagle Street, Albany, N. Y., not later than April 1, 1913.

Dr. JOHN F. W. WHITBECK, 781 Park Avenue, Rochester, N. Y.,

Dr. EDWARD D. FISHER, 46 East 52d St., New York,

Dr. ALBERT VANDER VEER, 28 Eagle St., Albany, N. Y.,
Committee.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The annual meeting of the Medical Society of the County of Schenectady was held in the ballroom of the Mohawk Golf Club, Tuesday evening, December 10, 1912. The following officers were elected:

Dr. F. C. Reed, president; Dr. L. Betts, vice-president; Dr. H. P. Groesbeck, secretary; Dr. G. V. Johnson, treasurer; Dr. J. E. Reed, Dr. W. L. Pearson, and Dr. D. L. Kathan, censors; Dr. A. S. Fay, the retiring president, delegate to the fourth district branch; Dr. C. G. McMullen, Dr. H. V. Mynderse and Dr. H. L. Towne, hospital committee.

MEDICAL SOCIETY OF THE COUNTY OF SCHOHARIE.—The annual meeting of the Medical Society of the County of Schoharie was held at Schoharie, December 10th. The following papers were read:

"The Early Practice of Medicine in Schoharie County," Dr. Henry F. Kingsley, of Schoharie.

"The Consideration of the Heart and Kidneys in Bright's Disease and Arteriosclerosis," Dr. Driesback of Middleburg.

TUBERCULOSIS PATIENTS OF COLUMBIA COUNTY TO ALBANY HOSPITAL.—The Columbia County Board of Supervisors have decided to send the county tuberculosis patients to the Albany Hospital. They have appropriated \$2,500.

TUBERCULOSIS HOSPITAL FOR SARATOGA COUNTY.—The board of supervisors of Saratoga county will establish a hospital for the treatment of tuberculosis in the town of Providence.

MATERNITY HOSPITAL, ALBANY.—Mr. Anthony N. Brady, of Albany, has given \$100,000 for the erection of new buildings in connection with the Elliott Austin Maternity Hospital and Infant Home, now being erected on Main avenue, Albany.

No TUBERCULOSIS HOSPITAL FOR YORKTOWN.—The State Commissioner of Health has denied the application of the Westchester County Board of Supervisors for a tuberculosis hospital at Yorktown. The refusal to grant the application was based on the objection of the New York City authorities on the ground that the establishment of such an institution would be a source of possible contamination to the water supply of the city.

STATE SUPERVISION OF DAIRIES.—A bill has been prepared for presentation at the approaching session of the legislature which will make the supervision of the milk supply at the dairy obligatory on the State, instead of on the city, as at present. The New York Milk Committee, which has prepared the bill, believes that the licensing and inspection of dairies, creameries and milk shipping stations should be done by the State Board of Health and that the State Department of Agriculture should control the health of dairy cattle and the sanitary conditions of the barns, etc., and the methods of milk production, while the City Health Department should test and inspect the milk when received.

NEW HOME FOR ARMY MEDICAL SCHOOL.—Surgeon-General George H. Torney, U. S. Army, has submitted an estimate calling for \$350,000 with which to erect new buildings for the Army Medical School on the grounds of the Walter Reed General Hospital, near Brightwood, thus giving the students the additional benefits of clinical and laboratory experience.

BEQUEST TO SCHENECTADY HOSPITAL ASSOCIATION.—The Schenectady Hospital Association has been bequeathed \$20,000 by the will of Mary F. Willard.

MEDICAL CONGRESS MUSEUM.—A committee, headed by Prof. A. Keith of the Royal College of Surgeons, London, has been formed for the purpose of organizing a museum in connection with the XVII International Congress of Medicine to be held in London, August, 1913. It is felt that the collection of museum material in one center possesses obvious advantages over the plan of leaving each section to collect and house the specimens required by the readers of its communications, and that the study of the available material will be enhanced by the co-ordination of the various departments. The committee is therefore seeking exhibits from provincial and foreign institutions and from private collections, it having been decided to leave the collection of the London Hospitals undisturbed. The committee will defray the expenses of transit of the exhibits, and will insure them against damage and loss besides taking every reasonable precaution for their safety.

PERSONALS.—Dr. MAURICE J. LEWI (A. M. C. '77), has resigned as secretary of the State Board of Medical Examiners.

—Dr. WILLIAM M. RAPP (A. M. C. '95), is now at Catskill, N. Y.

—Dr. JOSEPH F. HARRIS (A. M. C. '06), has removed from Amityville to 2 West 9ad Street, New York City.

MARRIED.—Dr. JOSEPH F. HARRIS (A. M. C. '06), and Miss Charlotte Goldstein, of New York City, were married on November 19, 1912.

DIED.—Dr. ROBERT V. D. COLLIER (A. M. C. '66), of Catskill, N. Y., died at the Albany Hospital. Dr. Collier was leading physician and druggist in Coxsackie but removed to Catskill a few years ago.

—Dr. CHARLES S. HAZELTINE (A. M. C. '66), head of the Hazeltine & Perkins Drug Company, a banker and Consul at Milan under President Cleveland, died at his home in Grand Rapids on December 17, 1912. Dr. Hazeltine, who was born in Jamestown, N. Y., in 1844, went to Grand Rapids in 1879 and established the first wholesale drug house in western Michigan. He is survived by his wife, one son and three daughters, one of whom is the Countess of Montegalas, who lives in Berlin.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Home Nurse's Handbook of Practical Nursing. A Manual for use in Home Nursing Classes, in Young Women's Christian Associations, in Schools for Girls and Young Women, and a working text-book for mother's, "practical" nurses, trained attendants, and all who have the responsibility of the home care of the sick. By CHARLOTTE A. AIKENS, author of "Hospital Management," "Hospital Training-School Methods," "Primary Studies for Nurses," "Clinical Studies for Nurses." 12mo. of 276 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$1.50 net.

This small book is not intended for the hospital trained nurse but rather, as the name indicates, for practical home nursing. The twenty-five chapters include a description of articles for use in the sick room, the care of room and patient, feeding of the sick, symptoms of disease, care of the baby, accidents and emergencies, maternity nursing and practical nursing points in special diseased conditions. In the last chapter invalid cookery is considered and selected recipes are given.

At the end of the chapters are series of questions which should prove useful for review.

The fundamental principles of nursing are clearly and forcibly set forth in this small manual.

T. O.

Modern Methods in Nursing. By GEORGINA J. SANDERS, Formerly Superintendent of Nurses at the Massachusetts General Hospital, Boston. 12mo. of 881 pages, with 228 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$2.50 net.

This volume is a comprehensive text-book for use of the students in the curriculum required by the modern training school, and it should also serve as a book for future reference. It is doubtful if the average undergraduate nurse in a large hospital can acquire more than a very general idea of even the simpler laboratory procedures or other special methods of examination. However, it seems well that these have been included not only that the nurse may understand and make the necessary preparations, but in graduate instruction she may become proficient in many of the routine tests under the doctor's supervision.

The chapters include the discussion of nurses' training—particularly methods of making beds, giving baths, packs, local applications, enemata, special methods of feeding, consideration of temperature, pulse and respiration, exposition of general and special method of examination, application of bandages and splints, discussion of drugs, poisons, elementary bacteriology and surgical technique, accidents and emergencies, general and special symptoms, foods, general and special diets and ward management.

This volume should prove of great value to nurses both as a text and reference book.

T. O.

Augustus Charles Bernays. A Memoir. By THELKA BERNAYS. Fairness+Fearless=Force. A. C. Bernays. St. Louis: C. V. Mosby Company, 1912.

Dr. Bernays was a highly educated and intrepid surgeon. He was a man of resolute character and marked individuality, and made an impression upon the community in which he worked. He was deserving of this memorial, not only on account of personal merit, but because of the value of his life to the student of surgical progress. The difficulties in the way of composition of biographies are well known, and many who undertake the task fail. The present memoir is an exception, for Miss Bernays possesses the rare gift, which has made only a few "lives" endurable and permanent. Her deep affection for her brother has in no way detracted from her proper sense of perspective and his life and character are revealed in their true proportions. Even those unacquainted with Dr. Bernays, may read this book with profit and with admiration for its literary style.

The Psychology of Insanity. By BERNARD HART, M.D. (London). Lecturer in Psychiatry, University College Hospital Medical School; Medical Superintendent, Northumberland House Asylum. Cambridge: at the University Press. New York: G. P. Putnam's Sons, 1912.

This little manual is an attempt to epitomize the more prominent features of the psychology formulated by Freud and Jung, comprehended under the method of so-called "psycho-analysis." The title is somewhat misleading, as phases of insanity are used for purposes of illustration of certain peculiarities of mental action, which appear in individuals who may be regarded as in health. This may not be a fault, however, as the author, very properly, enters a caution against the too ready determination of insanity, for apparently bizarre acts may be justified, or at least explainable, by conditions which are not easily evident. The practical view of this new school of thought may be questioned. The analysis of the mental symptoms of the chronic insane, and by this phrase may be designated the class of patients whose minds are permanently damaged, is of great value to psychological research, and recognition of this has

promoted the study of psychology; but the attempt to apply these methods, with neglect of observation of physical disorders, in cases of acute mental disease, with the possible exception of a small group of hysterics, is misleading and prejudicial to proper therapeutic management. The author is conservative, especially in acceptance of Freud's extreme ideas of the sexual element. The whole subject is too complicated for common reading, and the manual is adapted to the wants of psychologists rather than physicians, if we except the few officers of hospitals for the insane where attention has been attracted to this line of speculation.

A Doctor's Table Talk. By JAMES GREGORY MUMFORD, M.D., Lecturer on Surgery in Harvard University, etc. Boston and New York: Houghton, Mifflin Company, The Riverside Press, Cambridge, 1912.

Dr. Mumford has become well known for literary style by his classical "Surgical Memoirs," and this volume amply sustains his reputation for careful observation and grace of diction. "Table Talk," both in title and text, suggests the "Autocrat," and it is a pleasure to observe that comparison is not undeserved. The temptation to address the lay reader not infrequently assails the physician who has had success in writing for his colleagues. Unfortunately, perhaps, the technical author is not always happy in his attempts to reach the larger public, for great scientific knowledge is not easily transmitted into the baser sort. In this difficult task Dr. Mumford easily excels. For the characters of "Table Talk" he appears to have developed composite pictures, among them the eminent city surgeon, the broad-minded, keen country practitioner, the highly trained beginner absorbed in his instruments of precision and unaware of the greater sphere of human sympathy and personality. Hospitals, patients, socialism, woman suffrage, are subjected to the keen criticism of these broad-minded men. There is a particularly attractive description of Paré, and the reader looks with absorbing interest for light upon the relations of the great surgeon with the bigoted king, perhaps to discover whether Dumas' Chicot was accurately drawn. Alas! "Jonathan Primrose, M.D." accepts Chicot without question.

Every physician and a good many laymen should have this book.

Case Histories in Neurology. A Selection of Histories Setting Forth the Diagnosis, Treatment and Post Mortem Findings in Nervous Disease. By E. W. TAYLOR, A. M., M. D. 8 vol., pp. 305, with 37 illustrations. Boston, W. M. Leonard, 1911.

Dr. Taylor's book is a noteworthy contribution to the "Case History Series," which is a product of the Boston School of Medicine. The volume contains 114 cases, each of which is considered under four headings, (1) clinical history and physical examination, (2) diagnosis including discussion of differential diagnosis, (3) prognosis, (4) treatment. Occasionally, autopsy findings form a fifth heading.

The cases are grouped into sections according to "the time-honored and useful if somewhat inaccurate anatomical method of division into, (1) peripheral, (2) spinal cord and (3) brain disease, followed by (4) those for which a definite anatomical basis has not yet been found, and (5) by affections characterized by disorders of function, the neuroses."

There is, however, an introductory chapter devoted to a brief review of well established anatomical and physiological facts concerning the nervous system. This chapter contains several helpful illustrations. An index is also appended.

The cases presented are well selected. Typical and atypical features in the manifestations of pathological conditions are emphasized; but apparently not enough use has been made of laboratory methods as aids to early diagnosis. The Wassermann reaction and cytological study of spinal fluids are mentioned in connection with a few cases. The value of lumbar puncture, the serological, cytological and chemical tests to which the spinal fluid lends itself have not been sufficiently considered.

To one interested in post-graduate instruction in neurology, the volume offers much in material and mode of presentation.

H. S. B.

Surgical After-Treatment. By L. R. G. CRANDON, M. D., Assistant in Surgery at Harvard Medical School, and Albert Ehrenfried, M. D., Assistant in Anatomy at Harvard Medical School. Second edition, practically rewritten. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$6.00 net; half Morocco, \$7.50 net.

The very cordial reception accorded the first edition of this work is given as a reason for the appearance of this the second edition, enlarged and amplified. This is a subject which has never received the attention which its importance would warrant, for many a splendid piece of operative work has been nullified by careless or ignorant postoperative treatment. Much of postoperative treatment naturally falls to others than the operating surgeon and hence it is that such a volume as this is of especial value to internes and medical men generally who may have to assume responsibility for the postoperative care of surgical cases. The writers have endeavored to gather from literature and experience all that is best in connection with this subject and have succeeded in presenting it in concise and attractive form. The first part of the volume deals with the general consideration of the management of all sorts of postoperative conditions, while the rest of the volume is devoted to the postoperative treatment of practically each individual variety of operation. In this connection not only the treatment but all the important complications and sequelae are carefully discussed. The volume closes with a very excellent chapter on therapeutic immunization and vaccine therapy together with a consideration of the use of Coley's serum for malignant growths. The volume contains eight hundred and thirty-one

pages with two hundred and sixty-five original illustrations. Everything considered there can be but little question but that this is the most valuable volume upon this subject in the English language. It certainly merits and will receive even a more cordial reception than that which greeted the first edition.

A. W. E.

The Early Papers. By W. J. and C. H. MAYO. (Papers published previous to 1909.)

A Collection of Papers (published previous to 1909). By WILLIAM J. MAYO, M. D., and CHARLES H. MAYO, M. D. Two octavo volumes, averaging 550 pages each, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Per set, cloth, \$10.00 net.

In these two volumes are collected practically all the papers written by Dr. William Mayo and Dr. Charles Mayo, from the time of their graduation from Medical College to February, 1909, when the first volume of the "Collected Papers by the Staff of St. Mary's Hospital" appeared. These papers have been carefully classified under several headings and in addition, so far as possible, they have been arranged in chronological order, in this way indicating the gradual development of the work of the Mayos.

In the first volume are three papers on certain surgical conditions of the Osophagus. These are followed by twenty-six papers on the surgery of the stomach, a subject to which they have given more attention than to any other. These papers on the stomach are most interesting historically as they show the gradual development of the knowledge of the diseases of the stomach and the methods of treatment for so much of which the world is indebted to the Mayos. Following this are twenty papers on the liver and gall bladder, the last paper being a review of 1,500 operations upon the gall bladder and bile passages and indicating the tremendous progress which this phase of surgery has made in their hands. To the facts and deductions contained in these papers on the liver and gall bladder comparatively little of importance has been subsequently added. The volume concludes with three papers on the pancreas, which is also of historical interest and indicates of how recent development pancreatic surgery really is.

The second volume contains eighteen papers on the surgery of the intestine, the caecum and large intestine, claiming most of the attention. Then there follow four papers on Hernia one of which contains a description of their overlapping operation for ventral and umbilical herniae. Next come nineteen papers on the genito-urinary organs in which the prostate and the female genital organs receive the most attention. The article on skin grafting is followed by five papers on vascular surgery three of the five being devoted to the treatment of varicose veins. Three papers deal with surgery of the head and nine with the surgery of the central nervous system. There are three papers on the surgery of the neck and five on the surgery of the thyroid, the latter of special interest as they show the development of their remark-

able thyroid surgery. The paper on pneumotomy is followed by six on bones and joints. These are followed by ten papers on the principles of surgery and three so-called "Travelogue" papers. The volume closes with seven papers of addresses. Both volumes are very carefully indexed and every thing pertaining to the book making is very attractively done. We feel that a great addition to permanent surgical literature has been made by the collection of these papers from such master minds and skillful hands. As can be readily seen they cover almost the entire field of surgery and no medical or surgical library will be complete without them.

A. W. E.

Annales de la Clinique Chirurgicale Du Professeur Pierre Delbet.
No. 1, *La Desarticulation Temporaire Dans Le Traitement Des*
Tuberculosis Du Pied. (Temporary Disarticulation in the Treatment
of Tuberculosis of the Foot.) Par PAUL HALLOFEAU,
Chirurgien des hopitaux de Paris. Avec 35 planches hors texte.

This is the first of a series of monographs on important surgical topics, which are to appear under the direction of Professor Delbet. Tuberculosis of the foot has always been one of the most difficult forms of surgical tuberculosis to successfully manage—a fact emphasized by the important place it occupies in surgical literature. In this monograph attention is called to the unsatisfactory results which often follow the different methods of treatment heretofore proposed. The writer distinguishes between the tuberculosis of the foot in children and adults and emphasises the fact that while conservative treatment curettage and simple operations usually suffice in children, the process in adults requires more radical management, which in the great majority of cases should be some form of resection. His criticism of most methods of resection practised is that they do not allow sufficient access not only to the diseased bones and joints, but also to the tissues of both dorsal and plantar surfaces of the foot. The method of Delbet which he advocates consists in widely exposing both bones, joints and tissues in the affected area by means of temporary section of the tendons. In this way a thorough resection of bones and diseased tissues is allowed and the tendons can then be sutured and function retained. The technic is described in detail as is the pathology of the condition. There are also thirty-five splendid plates illustrating all the steps of the operation as applied to all the joints of the foot, making it thus perfectly simple for anyone to practice the same technic. This certainly is a distinct contribution to the literature of operative surgery most attractively presented and we await with interest the appearance of the proposed monographs upon other surgical subjects.

A. W. E.

SURGERY

Edited by Albert Vander Veer, M. D., and Arthur W. Elting, M. D.

*The Clinical Symptoms of the Early Stages of Spondylitis Deformans.
(Ueber klinische Erscheinungen bei den Frühstadien der Spondylitis
deformans.)*

ERICH PLATE. *Münchener Medizinische Wochenschrift*, No. 40, 58 Jahr-gang.

The writer states that the study of a large amount of autopsy material of individuals of advanced years shows more or less pronounced changes in the spine. This condition is generally spoken of as spondylitis deformans. These conditions usually appear most frequently in the working class. Only rarely apparently do these conditions give rise to very pronounced symptoms during life. To the complete stiffness of the spine has been given the name of von Bechterew's disease. The writer believes that von Bechterew's disease should be distinguished from the so-called arthritis ankly poética, which involves the small joints of the spine. The latter often occurs as the result of trauma and may involve the joints of the entire spine as well as the joints between the vertebrae and the ribs. The bodies of the vertebrae and the intervertebral discs are usually not involved. In spondylitis deformans, on the other hand, the intervertebral discs are usually affected early in the disease, the edges of the vertebrae become irregular and osteophytes are formed. These processes sometimes fuse and unite the vertebrae. The bony framework of the vertebrae is also often affected and its stability lessened.

The writer has made very careful X-Ray investigations of cases complaining of discomfort in the spine, and in this way has been able to demonstrate the earlier stages of the disease. Especially well is the disturbance of the intervertebral cartilage shown, some vertebrae being nearer together than others as a result of the destruction of the cartilage. The formation of the osteophytes can also be carefully studied. All of his patients were males but not all of them were over 50 years of age as has always been heretofore assumed. There was no hereditary influence. The principal complaint of all patients was pain in the back, which occurred when the patient walked, stood or sat down but disappeared as soon as he lay down. This is quite unlike the pains in the back associated with other diseases. In some instances the patients would relieve the pressure on the spine by bending forward and resting their hands on the thighs. In other instances spasms of the muscles along the spine prevented a large part of the motion of the spine. The walk is characteristic. The patient takes short careful steps and never fully extends the knee in order to avoid all jar of the spine. Rarely do abnormal curvatures of the spine occur. Pressure or tapping on the vertebrae may cause pain but not so pronounced as in tuberculosis or other inflammatory diseases. Discomfort does not always accompany the beginning of the disease. In a number of cases in which the symptoms existed but a short time, the radiograph showed that the conditions must have existed for a very considerable time.

The writer has made some extended study in comparative anatomy and has been able to find evidences of spondylitis deformans only in skeletons of animals which maintain more or less of an erect posture. He has come to the conclusion that, inasmuch as the disease occurs in practically only the working class, in association with more or less constant trauma to which the spines of those carrying loads are especially subjected, traumatism, is probably the most important factor in causing the disease. Arterio sclerosis and infectious diseases also probably play a rôle in some instances. A single severe trauma in some instances appears to have been the starting point of the disease. Therapeutically the writer recommends counter irritation with corsets or spinal braces. By the employment of the latter he believes the progress of the disease can often be arrested and the discomfort largely relieved.

The Early and Late Diagnosis of Carcinoma of the Stomach. (Ueber Frühdiagnose und Spätdiagnose des Magenkarsinoms.)

I. BOAS. *Deutsche Medizinische Wochenschrift*, 49, December 7, 1911.

Scarcely a year passes that new methods for the early diagnosis of carcinoma of the stomach are not proposed and practiced. In spite of all these recommendations, apparently little advance along this line has been recently made.

The definition of an early diagnosis is of especial importance. Some writers believe that an early diagnosis of carcinoma of the stomach is one made before the existence of a palpable tumor. But this is very often not an early diagnosis, as operations and autopsies frequently prove. Latterly, X-Ray examinations and serological methods have been much advocated but they have led to apparently little advance. A diagnosis should be regarded as an early one only from an anatomical point of view, and this in a great majority of instances, seems to be impossible. The test of an early diagnosis is whether the operative mortality can be diminished, the number of operative cases increased, and the life of the patient prolonged. Early diagnosis of carcinoma of the rest of the gastro intestinal tract, is much easier than early diagnosis of carcinoma of the stomach.

The writer believes that too little attention has been paid to the so-called late diagnosis. This has to do with the diagnosis of those cases in which surgical procedures are entirely out of the question.

The writer believes that every effort should be made to clearly separate this class of cases. He feels that altogether too many exploratory operations are done upon hopeless cases of carcinoma of the stomach.

As usually well recognized symptoms of late diagnosis he mentions ascites, palpable nodules in the omentum, involvement of the liver and bile passages and demonstrable involvement of various lymphatic glands. He emphasizes especially the importance of the comparatively recently discovered rectal metastases and states that in his experience, they occur with relative frequency in carcinoma of the stomach. They are usually located

in the lower pouch of Douglas, from two to four centimeters above the prostate. They may sometimes cause obstruction of the rectum, but are usually readily distinguished from primary rectal carcinoma, because they do not involve the mucosa and do not ulcerate. In the majority of instances, they give rise to no symptoms. Furthermore, they occur much more frequently in men than in women. Their presence, of course, excludes the possibility of any radical operative procedure.

He further emphasizes the importance of ovarian metastases from carcinoma of the stomach, usually involving both ovaries and sometimes giving rise to operations upon the ovaries, without any suspicion of the primary lesion in the stomach. The existence of such metastases eliminates any consideration of operation. Venous thrombosis in the lower leg is also an important symptom of late carcinoma. Furthermore, the *leukemia* reaction of Brieger and other serological and biological examinations will probably be of increasing importance.

The surgeon's endeavor should be to operate upon as favorable cases as possible and to carefully avoid the hopeless ones. The writer concludes:

First: That the efficiency of a true early diagnosis of carcinoma of the stomach is demonstrated only by the finding of a beginning carcinoma or a marked improvement in the immediate and ultimate results of operations.

Second: None of the so-called early distinguished symptoms have as yet satisfied this demand.

Third: The writer believes that it is very important to improve the methods of late diagnosis so that we can distinguish the early from the late cases.

Fourth: A proper understanding of the late symptoms of carcinoma will lead to a marked restriction of exploratory operations and their usually unsatisfactory results.

A New Operation for the Relief of Spastic Paralysis. (Eine neue Operation zur Beseitigung der spastischen Lähmungen.)

A. STOFFEL. *Munchener Medizinische Wochenschrift*, No. 47, November 21, 1911.

The cause of spastic contracture is a disease of the cortico spinal tracts, essentially the pyramidal tracts. Pyramidal tracts possess two important functions,

First: The conveyance of voluntary impulse from the brain to the spinal cord, and

Secondly: The function of inhibition.

Any injury to the pyramidal tracts usually affects the inhibitory fibres more seriously than it does those of innervation. The result of this is an increased active spasm of the muscles.

Certain muscles and certain groups of muscles are particularly apt to be the seat of spastic paralysis. These are the calf muscles; flexors of the knee, the adductors of the thigh and pronators and flexors of the

hand. Their spasm overcomes the action of their antagonists and disturbs the equilibrium.

Förster, to remedy the spastic condition, proposed the resection of the posterior spinal roots. This is a serious and extensive operation and not altogether a practical one.

The writer has devised a new operation for the relief of spastic contractures, which consists in cutting a certain portion of the motor nerve going to the muscles involved.

The writer states that the motor muscle nerve is made up of a number of nerve fibres, each of which are distributed to different parts of the muscles and constitute a so-called muscle complex. An anastomosis between the motor nerves rarely occurs.

In spastic paralysis, the energy developed, as a result of the impulses carried along the nerve, is much increased.

The writer's proposition is to sever certain portions of these motor nerves, thereby diminishing the impulses and the resultant muscle contracture, thus enabling the antagonists to resume their normal function.

The writer states that in cross section, the topography of a motor nerve is sufficiently characteristic to allow one to determine the fibres going to the different muscles. If there is any question about the function of any of these bundles, a minute electrode will demonstrate the function of the bundle in question.

The result of severing certain of these nerve bundles, destroys in part the function of the muscle. To those sufficiently versed in the topography of the larger motor nerves, the operation consists in exposing the nerves and the sectioning of a portion of those bundles of fibres going to the muscles affected.

In another instance, one may expose the nerve going into the individual muscle or groups of muscles and sever certain filaments of these nerves.

The writer reports a number of cases with illustrations in which he has done this operation for spastic contractures of arms and legs with apparently excellent results. In all, he has thus treated twelve cases. Massage, active and passive motions are practiced soon after the operation and every effort is made to restore as rapidly as possible the function of the antagonists.

The Etiology of Colon Infections of the Urinary Passages. (Aetiologisches zur Coliinfektion der Harnwege.)

CARL FRANKE. *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, Band 22, Heft, 4.*

Bacterial infection of the urinary passages have received a great deal of attention the past few years and especially the colon infections which in a great majority of instances are the cause of the inflammation. To any mode of infection is usually easily explained in cases where there has been instrumentation of the urinary passages but there is no such matter

ment as to the mode of infection in those cases in which instruments have not been used.

There are three ways in which the colon bacillus may gain access to the urinary tract:

The first is through the blood which, according to the French writers, is the usual mode of infection.

The second mode of infection is the so-called ascending infection through the urethra into the bladder and then into the kidneys. This mode of infection is supported by most of the German authorities.

The third mode of infection is through the lymphatic vessels. This mode, however, has received but very little attention in the literature.

As an argument against the so-called descending or blood infection has been advanced the fact that frequently bladder symptoms are the first to occur and furthermore, that women are more frequently infected than men. In childhood, however, bladder symptoms are comparatively infrequent and the disease usually involves the pelvis of the kidneys. It frequently happens that primary infection of the kidneys may be evidenced by symptoms pointing to inflammation of the bladder. It is rather striking that colon infections of the urinary tract are of relatively frequent occurrence in childhood during which period intestinal disturbances often occur.

The writer has investigated the lymphatic apparatus of the large intestine by means of injections. He finds that on the right side there is an intimate relationship between the lymphatic vessels of the right kidney and the large intestine. This may also exist to a certain extent on the left side and the direction of the stream in these lymphatic vessels is always from the intestine to the kidney.

In conjunction with this, the writer calls attention to the fact that pyelitis is more frequent in the right kidney than in the left, which he believes is explained by the difference in the relationship of the lymphatics to the intestines and the kidney on the two sides. He believes, as shown by experiment, that constipation tends to promote the escape of bacteria from the intestines and has demonstrated such bacteria in the regional lymphatic glands in a large percentage of cases investigated; while in control cases, this was true in only a very small percentage.

In conclusion, the writer states,

First. That there unquestionably exists a lymphatic communication between the ascending colon, caecum and the appendix and the right kidney. That a communication of this sort possibly exists between the descending colon and left kidney.

Second. That pyelitis more frequently occurs in the right kidney than in the left and that this is probably due to this lymphatic arrangement.

Third. As a result of even slight disturbance of intestinal function, bacteria pass from the intestine to the lymphatic vessels.

Fourth. In cases where one finds the bladder infected and the kidneys free from infection, this bladder infection may nevertheless have originated from the kidney.

Experiences in Thoracic Surgery under Anaesthesia by the Intratracheal Insufflation of Air and Ether.

CHARLES A. ELSBERG. *Annals of Surgery, Vol. LIV, page 749, December, 1911.*

About two years ago Meltzer and Auer first described the method of artificial respiration by the intratracheal insufflation of air. In later publications they showed that in animals the method was of great value for experimental investigations in which one or both pleural cavities had to be opened. At the same time, Elsberg had been making a large number of investigations on dogs, and with the aid of Dr. Neuhof had performed a not inconsiderable number of operations upon the lungs, bronchi, and the oesophagus in these animals. Thus he removed one or several lobes of one or both lungs, made incisions into bronchi with subsequent suture, etc. In all of these operations the method of intratracheal insufflation worked admirably. One or both pleural cavities could be widely opened, and all the necessary intrathoracic manipulations performed and the animals remain in good condition throughout the operations. After the thoracic wall had been closed by suture and the intratracheal insufflation stopped and the intratracheal tube removed, the animals began to breathe again in a perfectly normal manner. Unless death occurred from sepsis or followed from an unsuccessful operative procedure, the animals recovered entirely. When the dogs were killed days, weeks, or months after the operation, the larynx, trachea, and lungs were found in perfectly normal condition.

As the author has described in previous papers, the insufflation was carried on by means of a very simple apparatus which had been devised by Meltzer and Auer, and no care was taken to filter, warm, or moisten the air which was blown into the trachea. Nevertheless, no lesion could be found postmortem in the respiratory tract of these dogs. The anaesthesia was a very good one and seemed to be absolutely devoid of danger. It is well known that it is easy to kill a dog by means of ether given by inhalation, but the author has found it impossible to kill the animals with ether given by intratracheal insufflation. This safety is probably due to the fact that so much of the ether escapes upward in the trachea and out through the larynx and mouth.

The author gives an account of his experiences with the method for intratracheal insufflation in man and reports upon the cases of intrathoracic surgery which he has had up to the present time.

At the Mt. Sinai Hospital, New York, Elsberg has anaesthetized about 200 patients by means of intratracheal insufflation and has found the method very valuable for a great many operations. In all but a few cases, he found the anaesthesia very satisfactory and particularly free from complications and after effects. It was used in a great variety of acute and chronic surgical diseases. He found it most useful in operations upon the neck, more especially those around the trachea such as thyroidectomy, for the anaesthesizer is never near the field of operation and the operator can work around the trachea without causing any interference with the breathing. There is no danger of sudden collapse of the trachea when a large goitre has been removed and, no matter

how much the trachea has been handled, the anaesthesia continues smoothly and evenly. He likewise found the method useful in operations upon the face and jaw and within the mouth. In thoracic surgery it constitutes a positive pressure method, which, on account of its simplicity, the author believes may take the place of the more complicated positive and negative cabinets.

He reports in detail nine operations for greatly varying conditions. He states that while the cases are too few in number to allow one to draw final conclusions, they do indicate that by this method of intratracheal insufflation we have a simple means for the avoidance of those dangers which have prevented the development of surgery of the intrathoracic viscera.

On the Practical Results of the Recent Advances in the Diagnosis and Treatment of Syphilis.

J. H. SEQUEIRA. *The Lancet*, No. III, Vol. I, January 20, 1912.

Dr. Sequeira presented an abstract of his paper before the Plymouth Medical Society, including a discussion of the laboratory diagnosis of syphilis, the technique, the value of the Wassermann reaction, the influence of treatment on the Wassermann reaction, and the present state of knowledge of the administration of salvarsan.

His conclusions are summarized as follows:

1. The early diagnosis of syphilis is of the utmost importance (a) to prevent the spread of the infection, and (b) for efficient treatment. Treatment should begin in the primary stage. There should be no waiting for secondaries.
2. A doubtful chancre should be examined for spirochaetae. The dark background illumination method affords a reliable means provided the lesion has been untreated. Such an examination ought to be within the reach of all patients in the towns and might be arranged for by the health officer.
3. The Wassermann reaction is of the highest utility in the diagnosis of secondary and tertiary eruptions. If carried out by the improved technique, practically every secondary case gives a positive reaction. The reaction is also of value in determining and estimating the effect of treatment. The Wassermann reaction ought to be as much within the reach of every patient as is the Widal reaction or the examination of diphtheria swabs.
4. Treatment by mercury is undoubtedly efficacious. Nearly every case is influenced. After eight or more courses of injections 21 per cent of the patients still have a positive Wassermann reaction. After two or more years' treatment by mercurial pills 30 per cent give a positive Wassermann reaction. In the latter case it is naturally extremely difficult to be sure that the patient takes the remedy.
5. As regards salvarsan the danger is not great in properly selected cases. With rigid precautions taken in the preparation of the injections and with an aseptic technique the intravenous method has many ad-

vantages. The use of redistilled saline eliminates the pyrexia, rigors, vomiting, and other unpleasant symptoms in nearly every case.

6. The immediate effects of salvarsan, both on the clinic manifestations of the disease and on the Wassermann reaction, are far more rapid than are those of mercury. The ultimate effects in primary syphilis are remarkable; in early cases the secondary stage may be aborted. The effects in well-developed secondary syphilis are less striking and relapses certainly occur, and it remains for time to show the permanence of the results. In tertiary syphilis healing is extraordinarily rapid, but the Wassermann reaction is difficult to alter and relapses are likely to occur.

7. Everything points to the importance of early diagnosis and early treatment.

Cirrhosis of the Liver. Five Different Types of Lesions from which it may Arise.

F. B. MALLORY. *Bulletin of the Johns Hopkins Hospital, Vol. XXII, No. 240, March, 1911.*

The author discusses in this paper five different types of early lesions of the liver, the results of which are commonly classed under the term "cirrhosis." The term "cirrhosis," however, from a pathological standpoint, is applied to all sclerosed conditions of the liver, whether progressive or not, in which destruction of liver cells is associated with a real or apparent increase of connective tissue. Three pathological conditions may complicate these changes. First, fatty infiltration. This is of little significance except that the fat may serve as nutrition to the cells undergoing necrosis. Second, chronic passive congestion. The cells here disappear as a result of toxic necrosis complicated with haemorrhage. If the necrosis is recent, due to a terminal infection, the necrotic liver cells may be seen in the midst of red blood corpuscles filling the trabecular spaces. The latter are readily mistaken for distended sinusoids. Eventually the trabecular spaces shrink, the connective tissue contracts and thickens, and the liver shows a mild type of sclerosis. Third, general bile stasis. This condition arises from obstruction of the common bile duct by a calculus or tumor. The bile capillaries dilate around the hepatic vein, and rupture. Masses of insipid bile escape into the lymph spaces between the liver cells and the walls of the sinusoids. The bile is then dissolved by endothelial leucocytes which flow directly into the blood stream. This condition, uncomplicated, does not result in any sclerotic process.

The first type of cirrhosis considered is the toxic cirrhosis. This is the so-called central necrosis, due to circulating toxins. It is a frequent terminal lesion. In milder degrees the liver cells are invaded by polymorphonuclear leucocytes and endothelial cells, are dissolved, and removed by them. If the patient survives the cells regenerate. Sometimes, however, the cells do not regenerate. The walls of the sinusoids collapse, the lobules shrink and the connective tissue around the hepatic veins appears thickened. Occasionally this type is very extensive, so that in five

or six days the liver will diminish in weight from 1,500 grams to 600 grams. It is uniformly lessened and flabby. This is the early stage of acute yellow and red atrophy of the liver. Active regeneration may take place, so that the lobules undergo compensatory hypertrophy. These are the yellow bile stained areas of acute yellow atrophy of several weeks' duration.

In those parts where all cells are killed, bile ducts grow a third or half the way toward the hepatic vein and then stop. They do not produce liver cells. Lobules are diminished in size, sinusoids are dilated. These form the red parts of acute yellow atrophy of two to several weeks' standing. This type teaches that (a) simple necrosis of liver cells without injury to blood vessels and connective tissue does not result in proliferation of connective tissue. The connective tissue present shrinks and thickens, leading to an apparent but not real increase of it. (b) Liver cells regenerate only from liver cells. Bile ducts lengthen owing to proliferation of bile epithelium, but cannot form liver cells. It ought to be possible to recognize resulting type of cirrhosis long after acute lesion is over even without clinical history to help. Two points will aid: the irregular distribution of connective tissue, as seen on gross examination and the preservation of shape of the lobules, much shrunken in sclerosed portions. This type is of acute origin.

II. Infectious Cirrhosis—Due to the presence of bacteria which enter through the bile ducts. It is the only form of bacterial infection which leads to cirrhosis. Experience in early stages of this type is limited to two specimens. Both were two to three times the normal size and increased in consistence.

Infection is spread chiefly through the bile ducts but organisms invade the surrounding connective tissue. Changes are confined to the region of the portal vessels and extend toward the hepatic vein. The lesion is chronic,—active in some places and healing in others. The bile ducts are dilated and contain polymorphonuclear leucocytes and endothelial cells. Where process is active, bile duct epithelium is necrotic or gone; the bacteria lead to necrosis of liver cells, of blood vessel endothelium, and of the fibroblasts and to an acute inflammation exudate of polys and fibrin.

Where the process is less active and bacteria have died out, exudation consists of endothelial cells which are phagocytic. Proliferative activity on the part of the fibroblasts is well marked and follows the direct injury done the connective tissue cells by the toxins from the bacteria. As a result of the exudation around the portal vessels, of the encroachment of process on the liver cells, and of the proliferative activity on the part of fibroblasts, the portal tissues show up as broad bands running very regularly between the lobules of the liver cells.

Inflammatory exudation in smaller bile ducts leads to occlusion of them and obstruction to the outflow of bile; the obstruction is focal.

III. Pigment Cirrhosis—Due to mechanical causes.

Endothelial leucocytes, filled with blood pigment, collect in great numbers in lymphatic spaces and vessels, chiefly around the portal vessels, but to some extent around the hepatic vein and irregularly throughout

the lobules between the liver cells and the walls of the sinusoids. When filled with pigment they migrate; and wherever they collect in numbers, they injure the connective tissue by stretching it. Therefore, there is a certain amount of regeneration and sclerosis is produced. Same phenomena are seen in pancreas, adrenals, lymph nodes. Primary injury is done to connective tissue. This type is characterized by pigmentation and smooth surface.

IV. Syphilitic Cirrhosis—two types—Congenital and acquired.

In the former, diffuse lesions; in the latter, focal. Two types of lesions are often combined in congenital and may coexist in acquired.

The primary lesion, produced by the treponema pallidum, is best studied in early chancres. Treponema pallidum are present in great numbers and are situated in lymph spaces between the cells and between the fibrils. They occur in connective tissue between the collagen fibrils everywhere within areas invaded, including that in the intima of arteries and veins. The injurious action is exerted on fibroblasts which are thereby stimulated to active regeneration as result of which much fibrous tissue is produced. This accounts for hardness of the lesion in congenital cases. Reaction often does not go beyond this stage.

In primary and tertiary lesions, reaction is more intense, and there is added to proliferation of fibroblasts, infiltration of lymphocytes including plasm cells and of numerous eosinophiles. Under certain conditions giant cells are formed from endothelium lining the smaller blood and lymph vessels. They may occur in chancres, gummatous, and especially in tertiary lesions of the skin, and are due to the presence of the treponemata within the vessels and to their action on the endothelial cells; the organisms seen in large numbers within, resulting in giant cells.

Proliferation of fibroblasts which takes place in walls of veins and arteries, especially in the intima, leads to narrowing and occlusion of smaller vessels. Therefore, the areas thus deprived of nutrition undergo necrosis (gumma formation). With the occurrence of the necrosis and of acute inflammatory exudate the treponemata disappear from lesion, and area affected tends to heal, owing to local immunity being apparently produced by the leucocytes. In this respect, focal lesions in syphilis differ from those in tuberculosis which tend to spread indefinitely.

Reverting to liver in congenital syphilis, the treponemata injure primarily the connective tissue cells, especially those between liver cells and wall of sinusoids. As result of proliferation of fibroblasts the connective tissue increases in amount; treponemata are numerous where connective tissue is most abundant. Later as collagen fibrils contract, liver cells are compressed and atrophied.

In acquired syphilis early lesion is diffuse and similar to that in congenital syphilis. It occurs in larger and smaller foci leading to necrosis, inflammation and infiltration, forming characteristic gummatous which heal and contract.

V. Alcoholic Cirrhosis—This presents a peculiar characteristic form of necrosis. Cytoplasm undergoes a degenerative change, showing irregular coarse hyaline meshwork, stains deeply with eosin and with phosphotungstic acid. This change may attack single cells or groups—

focally or diffusely. Affected cells may be anywhere in lobule, but lie commonly in region of portal vessels.

Affected cells and nuclei are swollen when hyaline has reached a certain degree of intensity, cells are invaded by polys and endothelial cells which dissolve the cells, the hyaline material last and thus cause disappearance. As a result, surviving liver cells show regeneration and fibroblasts proliferate. All these changes when extensive, diffuse, and acute, lead to considerable increase in size and weight of organ. Surface of such organ is smooth and on section cut surface is even, lobulation indistinct and consistence increased so that liver tears with difficulty. Destructive hyaline change may cease entirely and leave nothing but sclerosis. Increase in connective tissue later occludes bile ducts and blood vessels, resulting in focal bile stasis. In these areas, bile capillaries are distended and in places ruptured so that masses of inspissated bile have escaped into lymph spaces. Obstruction to blood flow results in portal stasis. This type commonly complicated by fatty infiltration which leads to marked increase in weight of liver—the so-called hypertrophic cirrhosis. But presence of fat in liver cells does not interfere with degenerative process. Cause of increase in connective tissue in this type is not obvious. Primary injury affects liver cells and is followed by regeneration. In toxic cirrhosis injury to liver cells does not result in proliferation of fibroblasts. On the other hand, in alcoholic cirrhosis, around and invading each necrotic cell, there is an acute inflammatory exudate of leucocytes which cause stretching of connective tissue. The injury which results in proliferation of fibroblasts seem to be mechanical in organ.

Leaving out tumors, other causes for proliferation of fibroblasts beside mechanical injury or toxic is presence of fibrin.

Conclusions—At least five different types of lesions may terminate in cirrhosis (sclerosis) of the liver; one is acute, the other four more or less chronic in character.

Toxic cirrhosis (following extensive central necrosis) demonstrates clearly three facts:

1. That when all the liver cells of a lobule are destroyed the bile ducts grow out a certain distance towards the hepatic vein, but that they do not produce liver cells.
2. That liver cells regenerate only from liver cells, never from bile duct epithelium.
3. That fibroblasts (connective tissue cells) do not proliferate when liver cells alone are destroyed.

The other four types of lesions terminating in cirrhosis show that fibroblasts multiply (regenerate) only when fibroblasts themselves have been injured or destroyed and thus lead to increase of the connective tissue.

The so-called alcoholic type of cirrhosis is characterized by a peculiar hyaline degeneration of the cytoplasm of the liver cells preceding necrosis. In this same type of cirrhosis the contraction of the connective tissue frequently compresses groups of liver cells so that they may resemble bile ducts; in these compressed liver cells it is often possible to demon-

strate large fat vacuoles or hyline material due to degeneration in the cytoplasm, neither of which occurs in true bile duct epithelium.

In toxic cirrhosis the connective tissue thickens from contraction, but does not increase in amount because the fibroblasts have not been injured.

In infectious cirrhosis the fibroblasts are destroyed along with the liver cells; hence, there is active regeneration and much production of connective tissue.

In syphilitic infection of the liver the primary injury is done to fibroblasts, in consequence, they proliferate (regenerate) often in excess; the contraction later of the collagen fibrils produced by them results in compression and more or less atrophy of the included liver cells.

In pigment and alcoholic cirrhosis the proliferation of the fibroblasts is apparently due to injury caused mechanically by cells of exudative origin stretching the connective tissue; the reaction is similar to that produced in the lungs and peribronchial lymph nodes by endothelial leucocytes filled with carbon packing themselves in the finer lymph spaces.

OBSTETRICS

Edited by James P. Boyd, M. D.

Diagnosis and Treatment of Contracted Pelvis.

J. M. MUNRO KERR. *Surgery, Gynecology and Obstetrics*, Vol. XIII., No. 1, July, 1911.

The diagnosis and rational treatment of contracted pelvis depend upon as careful measurements of the maternal pelvis and as complete data on the size and consistency of the child's head as can be obtained. Unfortunately accurate determinations cannot be arrived at. In the particular case the essential consideration is the relative size of the canal and the body that is to pass through it. Whether or not the particular head fits the particular pelvis may be determined; and in the manner to be described.

To quote the author: "It is a bimanual method and requires no assistant to press down the head into the pelvis. The accoucheur takes the Pawlick grip of the foetal head with his right hand and presses the head into the pelvis, while with two fingers of the left hand introduced into the vagina he feels how the head engages. At the same time with the thumb he feels all along the brim and estimates the degree of overlapping. I attach great importance to the examination with the thumb and in that respect chiefly my method differs from Müller's. I can now estimate with great accuracy whether or not a head will pass the brim spontaneously and also the degree of traction that is likely to be required should forceps be necessary."

Proficiency of course follows practice. The method is employed at the 36th week and again at the beginning of labor if the deformity is of moderate degree.

Based upon the measurement of the true conjugate, pelvic deformities are divided into three groups: (1) Minor when over 9.3cm., (2) Major when below 7.5cm., and (3) Medium when between 9.3 and 7.5cms. In (1) and (2) the procedure may be definitely laid down; in minor degrees of contraction spontaneous delivery is almost the invariable rule, while in the treatment of the major degrees selection must be made between Caesarean section and craniotomy. The medium degrees of contraction are NOT to be treated arbitrarily if the enormous maternal morbidity at present attending such cases is to be diminished. The relative size of the head and pelvis determines the procedure.

A summary of the author's opinion of various procedures follows:

(a) Spontaneous labor. Granted that such factors as presentation, position, strength of uterine contractions, etc., are favorable, the patient may with safety be allowed several hours ("quite frequently six to eight") of second-stage pains without danger to herself or the child with ultimate prospects of spontaneous delivery. Such treatment has given better results than the early (though it may be presumed skilful) application of forceps.

(b) Forceps are indicated where nature just fails to deliver the child past the obstruction; they may be applied in cases in which spontaneous labor was reasonably to be expected, the effect of the pains and not their duration becomes the indication for interference. Traction should be moderate and the child delivered without serious injury.

(c) Pubiotomy is invariably a 'reserve operation' indicated in rare cases where nature and skilful application of forceps just fail of delivery. Increased skill in selecting cases to be given the test of labor can but decrease the frequency of employing the measure.

(d) Induction of premature labor should be decided upon only after examination under anaesthesia at the 36th week. Having in mind the history of a first or test labor, the procedure is permissible if the head may be made to engage and the provisions for caring for a premature infant are satisfactory. If engagement is impossible, Caesarean section at term is the only alternative; if easy, re-examination at the end of ten days is the indication.

Under contractions of major degree, the author is convinced that, in the interests of the mother, the family and the state, craniotomy on the living child is occasionally justified; but with a true conjugate below 5.5cms. the procedure is both difficult and dangerous.

Most recent and valuable statistics based upon Caesarean section for marked contraction prove the gravity of the operation in cases of suspected infection; such cases present a mortality of 17.3% contrasted with one of 2.9% in clean cases.

As substitutes for Caesarean section where infection is suspected, the author mentions:

(a) Craniotomy. With a mortality of but 8%, craniotomy would seem justified in a young woman with a living child in lieu of Caesarean section with removal of the uterus; with a dead or dying child, it is the only treatment to be considered.

(b) Pan-hysterectomy, rather than sub-total (or supra-vaginal)

hysterectomy, undoubtedly gives the best results (presenting a maternal mortality of 15%) when Caesarean section is applied to suspect cases; and would seem especially suitable in cases where future pregnancy, because of approach of the menopause, is not to be expected.

(c) Extra-peritoneal Ceasarean section offers the disadvantage of opening up loose cellular tissue with the possibility of future infection and is not expected to give better results than the classical section.

That the child may be saved, the uterus spared for future pregnancy and the possibility of spreading infection still decreased, the author suggests: preliminary surgical cleansing of vagina and cervix, section with protection of the abdominal contents by pads, and delivery of the placenta and membranes, protected by gauze and followed by a quantity of the same, through the cervix and vagina; the principle of the modified procedure being to deliver the ragged and infected edges of the membranes through already-infected channels rather than draw them over the edges of the uterine and abdominal wounds.

The writer concludes with an appeal for more thorough training that the importance of the early diagnosis of pelvic deformity and the limitations of every operation, which may be employed, may be appreciated. By this means more than by any other will mortality and morbidity be most surely lowered.

P. T. H.

The Treatment of Puerperal Septicaemia by Bacterial Vaccines.

G. T. WESTERN. *The Lancet*, No. VI of Vol. I., February 10, 1912.

Dr. Western's report is based upon patients admitted to the puerperal septicaemia ward at the London Hospital. These patients are drawn from the neighboring districts after confinements in their own homes, often under the most unfavorable sanitary conditions, and many of them have been attended by a mid-wife, and others by a private physician.

The term "Puerperal fever" probably includes two different conditions: first, a localized bacterial infection in the genital tract, which is associated with more or less toxæmia; and, second, a local infection in the genital tract from which bacteria are being carried into the blood stream, continuously or not. The latter cases constitute the group of true septicaemias.

Dr. Western's cases have been tabulated in two classes: first, those treated by vaccines; and, second, those not treated by vaccines.

Of the one hundred cases tabulated twenty-five followed miscarriage, although only two of these showed criminal interference. In sixty-two per cent of the cases pyrexia was observed on the second or third day after delivery, and it is noted that the fatal cases occurred equally among those which appeared on either the second or third day, although the patients who lived were much more numerous among the patients in whom the disease appeared on the third day.

Blood cultures were made in almost every case and a positive result was obtained in forty per cent. This is regarded as an under estimate of the number of true blood infections, and it is probable that cultures taken during a rigor or when the temperature is at the highest point would be more apt to give a positive result. Thirty-six of the thirty-nine positive

cases showed streptococci, two cases showed the staphylococcus aureus, and one case a Gram-negative coccus.

Cultures were also taken from the fundus of the uterus, precautions against contamination from the cervix being used. Wherever possible autogenous vaccine was used, but where no culture was obtainable "stock," vaccines were administered. Of the fifty-six cases treated thirty-eight lived and eighteen died, giving a mortality of thirty-two per cent. Of the forty-four cases untreated twenty lived and twenty-four died, giving a mortality of fifty-five per cent. This may be compared with another series of untreated cases, of which sixteen examples were available, which gave a mortality of eighty-seven per cent. As a result of the investigation of this series of cases, it appears that they may be divided into three groups:

1. Those which respond at once to an inoculation of a vaccine, the temperature falling to normal within forty-eight hours. Case 3 is a good example of this. Previously to inoculation there were streptococci in the blood stream and the temperature had varied between 101° and 104° F. for four days. Following on the first inoculation the temperature fell; within twenty-four hours the maximum was 102°, and in forty-eight hours it was normal. Recovery was uninterrupted.

2. They may respond to each of a series of injections, the average of the six four hourly temperatures falling a degree or so. Case 15, a chart of which is given, shows this well.

3. The temperature may be steady until the daily maximum is not above 102°. Further injections fail to reduce this. In these cases there is probably a local collection of pus which must be found and drained; the temperature will then quickly fall to normal. No. 12 illustrates this well. Previously to inoculation the patient had seventeen rigors in sixteen days; the daily temperatures varied between 100°-106°. After the first injection the rigors ceased entirely, and the temperature subsided until the daily maximum was 102°. It remained thus for three weeks, further injections having no influence. An abscess then pointed in the buttock. Immediately on opening and draining it the temperature fell to normal and did not rise again.

The following conclusions are stated:

1. The mortality amongst those cases of puerperal septicaemia in which there is definite bacteriological evidence of bacteria in the blood stream is from eighty-five to ninety-five per cent.

2. This mortality may by inoculation with autogenous vaccines be reduced to about fifty-five per cent.

3. This mortality amongst notified cases of puerperal fever is about sixty per cent.

4. This mortality may by inoculation with appropriate vaccines be reduced to about thirty per cent.

5. In cases of puerperal sepsis, if it is decided to explore the uterine cavity the opportunity should not be lost of obtaining a culture at the same time.

6. In the treatment of puerperal sepsis "stock" vaccines give inferior results, and should only be used when an autogenous vaccine cannot be obtained.

P. T. H.

ALBANY MEDICAL ANNALS

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EXOPHTHALMIC GOITER AND PERVERTED THYROID SECRETION:^{*} AND THEIR TREATMENT WITH HIGH FREQUENCY ELECTRICITY.

Read before the Medical Society of the County of Albany, November 20, 1912.

By WILLIAM G. LEWI, M. D.

Despite the fact that during the past few years the subjects of exophthalmic goiter and perverted thyroid secretion have received more attention from medical writers than have any other conditions: and despite the many pages in the medical journals that have been devoted to the discussion of treatment, both medical and surgical, the question of etiology is still an open one.

Sajous' theory that irritation of the pituitary body by any one of a number of toxines causes an excess of secretion in that body, and because of a nervous connection therewith, the thyroid is stimulated to excessive secretion, producing the characteristic symptoms, is purely speculative.

Kocher (1), Lobenhoffer (2), Ebbell (3), Wegelin (4) and many others seem to be agreed that certain waters contain an element or elements which produce in those who drink thereof enlargement of the thyroid gland with the resultant over or perverted secretion and train of symptoms. On the other hand, Forchheimer fails to include in his chapter on the thyroid any paragraph on etiology, but states under prophylaxis that "it has not been shown that boiling the water removes the cause, neither have chemical analyses demonstrated that either the presence or absence of iodine in the water has any effect upon

In a previous article by the same writer the suggestion was made that the term "Perverted Thyroid Secretion" be used to describe all conditions of enlargement of the thyroid gland accompanied by any symptoms, excepting the well marked cases of Exophthalmic Goiter. It is in this sense that the term is here used.

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the development of endemic goiter." And he might also have added that nothing else found in the water has been shown to be the cause.

Twenty-five years ago Struempel said that "The anatomic cause of this disease is entirely unknown to us:" and despite the theories of the speculative physiologist and the experience of the internists and surgeons the same fact still maintains. And if I now proceed to suggest a cause for a large proportion of the cases of exophthalmic goiter and perverted thyroid secretion, I do so with all possible modesty and only because my observations are based on a means of treatment that is new, and that has been most potent in my hands, its very potency dependent on the theories I shall here advance.

That the sympathetic nerve system is *involved* in all cases of exophthalmic goiter and perverted thyroid secretion is unquestioned. Struempel says—"the whole type, and almost all the single symptoms of the affection, point definitely to an affection of the nervous system, which, with regard to the most prominent symptoms, is usually considered a 'vaso-motor neurosis' or 'an affection of the sympathetic.'" Kocher (1) says: "The toxic substances generated by the thyroid in excess *probably* act most intensely on the sympathetic nerves or ganglia, which explains the symptoms of this disease, especially the tachycardia without objective changes in the heart." Jaboulay (5) has operated for the relief of symptoms in exophthalmic goiter by removing the superior cervical ganglion and two to three centimeters of the nerve trunk on each side, "with benefit in every case."

That *all* the symptoms of exophthalmic goiter and perverted thyroid secretion, excepting those due to mechanical pressure of an enlarged gland, are due to a toxæmia of the sympathetic nerve system, is the theory that I advanced in a paper read at the recent meeting of the American Electro-Therapeutic Association, and gave the following reasons in support of the theory.

The physiologist tells us that the sympathetic nerve system controls the secretory epithelium and the unstriated muscular fibres. A resumé of the symptoms (of exophthalmic goiter and perverted thyroid secretion) will show conclusively that *all* are due, either to lack of control of the unstriated muscular fibres or to deficient or defective glandular secretion, directly or indirectly.

Exophthalmos is due to a dilatation of the vessels of the orbit, from a relaxation of these vessels, due to a lessening, or a loss, of sympathetic nerve control of the unstriated muscular fibres of these vessels.

Tachycardia and palpitation—a difference in degree only—are caused by lack of sympathetic nerve control and possibly also by direct thyroid toxæmia. The middle cervical ganglion, located opposite the sixth cervical vertebra, has branches which ascend to the thyroid gland and others which join the cardiac plexus, proving a direct sympathetic nerve connection between the thyroid and the heart, and accounting for the tachycardia and palpitation. The writer's attention was first called to this possible relation between the thyroid and the heart by noting in a number of cases of perverted thyroid secretion a marked tenderness just over the location of the middle cervical ganglion—the nape of the neck—and reasoning that the tenderness was due to the action of the toxines on the ganglion, and thereby affecting the heart action, he treated over this area. The result of this treatment was that the cardiac symptoms were relieved within a week in a large proportion of the cases: and this was especially noteworthy because of the fact that several of the cases had been under treatment for varying lengths of time before this observation had been made and treatment directly over the thyroid gland had had no effect on the tachycardia. After a few treatments over the region of the middle cervical ganglion the cardiac symptoms improved.

In the gastro-intestinal symptoms we have the index for all the symptoms of defective metabolism. The sympathetic nerve, controlling as it does, the secretory epithelium, is, in conditions of perverted thyroid secretion, unable to properly control the secretions of those glands that provide the fluids for the digestion of the foods ingested. Digestion and proper absorption, under these conditions, cannot take place. In the opinion of the writer, either emaciation or obesity is the result of failure of proper digestion and absorption, according to the nature of the defective digestion or the idiosyncrasy of the individual or both. Some of the intestinal symptoms are due directly to this perverted secretion of the digestive glands and others are due to the presence of the poorly or partially digested food masses. These symptoms also have been markedly benefited by treat-

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ment over the relative portions of the sympathetic nerve, as evidenced by improved digestion, a gain or loss of weight as the case might be, and by more normal defecation.

The trophic disturbances—flushing of the skin, excessive perspiration, dryness of the skin, etc.—are due directly to the toxæmia of the sympathetic; and although slower to respond to treatment, are finally markedly influenced. The same is true of the irregular and sometimes painful menstruation.

The marked tenderness over the fifth and sixth cervical vertebrae (which I gave as one of the symptoms, having found this tenderness present in every case) is explained by the location of the middle cervical ganglion.

Of the nervous manifestations, many are due to that ever-present factor in faulty metabolism, from whatever cause, insufficient nerve nutrition.

Diarrhoea, if present, may be due to the presence in the intestines of masses of faultily digested food: and if constipation is present, the same reason holds good, with the additional factor, that where the secretion of the digestive fluids is below par, the same is true of those substances that favor and bring about peristalsis.

Colitis, if present, is due to the same causes.

Enteroptosis I have found present in every case examined. This condition is reasonably explained as a secondary condition in those cases where there is any emaciation, or general loss of tone, due to the loss of substance or tone of those structures that are designed to hold the abdominal organs in place.

To recapitulate, I would say that *all* the symptoms herein mentioned as caused by perverted thyroid secretion, are due, either directly or indirectly, to a toxæmia of the sympathetic nerve system, caused by the probably selective action of the thyroid toxine on the sympathetic nerve.

In this same connection I ask your indulgence if I again quote from the same paper, in reference to a class of cases closely allied to those of exophthalmic goiter and perverted thyroid secretion, both in symptomatology and the results of treatment.

"These cases present themselves with a history that is identical with one of perverted thyroid secretion, but with no evidence, past or present, of enlargement of the thyroid gland. Headache, nervousness, palpitation, repeated and severe attacks

of indigestion, dryness of the skin or excessive perspiration, loss of weight or obesity, diarrhoea or constipation, muscular weakness, colitis and enteroptosis are some of the symptoms and conditions found. But in none of these cases have I found the marked tenderness over the fifth and sixth cervical vertebrae. In most of these cases the history is that a severe attack of indigestion or ptomaine poisoning or some other extreme gastro-intestinal disturbance preceded this train of symptoms and that thereafter the condition had become chronic, some of them having persisted for over five years.

"If the thyroid toxine, acting upon the sympathetic nerve, can produce the train of symptoms that accompanies cases of perverted thyroid secretion, cannot another toxine produce similar symptoms through its effect on the sympathetic nerve? I believe that it can and does. The study of the chemistry and bacteriology of the intestinal tract, in spite of all that has been done along these lines, is still in its infancy. The toxines that are there elaborated are an unknown quantity. In the opinion of the writer the symptoms of these latter cases are due to a toxæmia of the sympathetic nerve system, from a toxine or toxines elaborated within the intestinal tract under conditions favorable for their formation. *After* an attack of ptomaine poisoning, for example, the toxines are no longer elaborated, but their effects upon the sympathetic nerve system have been such that it is no longer able to perform its functions in a normal manner. The result is that the secretions are not normal and the unstriated muscular fibres are not controlled as in health. By means of the High Frequency current we are able to produce an hyperæmia along the spinal column, through which the sympathetic is stimulated and its function restored. The result of treatment in these cases has been surprising: all the symptoms are rapidly improved—much more quickly than when caused by perverted thyroid secretion—and the gain or loss of weight, as the case may be, is rapid and permanent."

It is my opinion that all cases of exophthalmic goiter and perverted thyroid secretion are caused by a toxæmia or irritation of the sympathetic nerve system, excepting those cases that are due to definite tumors, degeneration or inflammation.

In the cases just cited the thyroid was not involved, why, one cannot say, excepting that the thyroid escaped the effect of the

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toxaemia in these cases as did other glandular structures. In similar cases, in other patients, there is no reason why a toxaemia or irritation of the sympathetic nerve system should not affect the thyroid secretory epithelium as well as that of any other secreting gland. Because of the unstable structure of the thyroid gland, and its tendency to parenchymatous enlargement, such a toxaemia or irritation, affecting it at all, would cause it to proliferate its epithelium, either by a process of segmentation or by a development of latent or persistent embryonic cells, in its effort to carry out its important but mysterious functions. By its very nature, it continues to pour out its over-abundant or perverted secretion from its increased epithelium, *after* the sympathetic toxaemia has subsided, and persists in producing a train of symptoms and conditions identical with, but more intense than those that caused the original increase in its size and over-activity.

Enlargement of the thyroid gland is not always due to proliferation of its normal epithelium, as is made evident by the different trains of symptoms that follow such enlargement and to which the terms hyper- and hypothyroidism have been given: or the enlargement may be due to an increase of colloidal substance only, in which cases there are few if any symptoms. Another cause for increased or perverted thyroid secretion is acute congestion of the thyroid gland.

That sympathetic toxaemia or irritation may be brought about by conditions other than auto-intoxication is acknowledged. Conditions about the female generative organs may produce an irritation without any toxaemia that will affect the sympathetic and cause the thyroid to become enlarged and over-secrete. Correction of such conditions is often followed by complete subsidence of the symptoms and a return of the enlarged thyroid to normal size and function.

Cohn and Peiser (6) report cases of "hyperthyroidism" caused by disease of the pancreas.

Alamaratine (7) mentions rheumatism and tuberculosis as possible causes.

Kraus (8) says in regard to a case of epigastric pain accompanying exophthalmic goiter; "After exclusion of all other causes for the pain, nothing was left but the assumption of the

action on the solar plexus of the toxine causing the exophthalmic goiter."

Dlugasch (9) reports a case with an onset resembling typhoid fever with general malaise, headache, nausea, a tongue that looked like typhoid, sordes on the tongue and enlarged spleen. He says that in exophthalmic goiter there is sometimes a rise of temperature with enlarged spleen and that it behooves one to make a careful physical examination.

McCarrison (10) has expressed the belief that goiter is due to "a living organism of disease in the intestinal tract:" and that the thyroid gland is markedly influenced by the nature of the intestinal bacteria. He treats these cases with an auto-gogenous vaccine; and also with other vaccines.

Ebstein (11) reports remarkable benefits in cases of exophthalmic goiter by the relief of severe constipation by the systematic use of injections of oil.

Starck (12) says that "Puberty, pregnancy or lactation is liable to rouse the trouble from a latent to an active stage."

There is no doubt in the mind of the writer that all the various causes herein mentioned and quoted, and many others, cause exophthalmic goiter and perverted thyroid secretion through the toxæmia or irritation of the sympathetic nerve system acting upon the thyroid gland. The importance ascribed to the waters of certain localities in causing these conditions may be explained by the effect of such waters upon digestion, so perverting that function that proper absorption and assimilation is not possible and a condition of auto-intoxication results. This auto-intoxication will, in a certain proportion of cases, cause a sympathetic nerve toxæmia, and in those whose thyroids are susceptible to such an influence, goiter will develop.

In the treatment of cases of exophthalmic goiter and perverted thyroid secretion with High Frequency Electricity my most sanguine expectations have been more than realized. I shall make no attempt to report all of these cases in detail, but shall content myself with detailing a few and then giving the general results.

CASE A.—This patient states that she has always had a "lump in her throat." Some months before she was referred to me she noticed that the "lump" was getting larger, and it continued to increase in size. She became very nervous; had decided and annoying palpitation, even

when lying down; the "beating" in the neck was very annoying; she had great difficulty in breathing, especially on exertion, and tired on the slightest exertion. She had great difficulty in swallowing—as she said, she "had to force her food down;" had a hacking cough and trouble with her eyes. Three months prior to the time I saw her she had been compelled to give up her work, and when I first saw her she had lost ten pounds in weight, weighing 103 pounds. Upon examination I found a greatly enlarged thyroid with marked pulsation, the pulsation apparent not only upon palpation but visible; extreme exophthalmos; pulse 170 to 180 and irregular; decided tremor; extreme nervousness; profuse perspiration and great muscular weakness. Dyspnoea was so marked that it was painful to watch the breathing.

Under the High Frequency treatment the gland has been reduced to practically normal size, the slight existing enlargement being due chiefly to the stretched integument; the pulsation is no longer present; exophthalmos so slight that it is scarcely noticeable; the pulse is 82 and regular; her nervousness is a thing of the past; condition of the skin normal; her powers of endurance are normal; she has no difficulty in swallowing; has no dyspnoea or cough and has gained fourteen pounds in weight. In fact, she says that she is feeling perfectly well: and has been back at her work for the past ten weeks. I first saw this patient on May 28, 1912; within two weeks of that time she began to improve and the improvement has continued uninterrupted.

In one case only (Case B) did treatment prove altogether disappointing. In this instance the gland was moderately enlarged, the right lobe being considerably larger than the left; the patient was very nervous and easily excited; had moderate exophthalmos, palpitation, irregular menstruation and had lost eighteen pounds in a year, weighing at this time 103 pounds. Noting no improvement after twenty treatments, I conferred with her physician and we decided that this was a case for the surgeon. In January of this year the right lobe of the gland was removed. The enlargement proved to be an adeno-cystoma of the right lobe, the left lobe being normal. In July, six months after operation, I saw this patient; from her statement she is still very nervous, has occasional palpitation and her weight is the same as when I first saw her. Her exophthalmos, although moderate, is still apparent.

In this case we had to deal with a definite tumor; and I am sure that this class of cases—of definite tumors—will continue to baffle our best efforts and are proper cases for the surgeon.

Another patient (Case C) had a swelling in her neck for three years; she had spells of choking and coughing, which she likened to asthma; had palpitation, difficult breathing and irregular menstruation. Pulse was about 130; heart action irregular, but there was no murmur; dyspnoea very marked upon exertion. This patient told me that for the past five or six years, each summer and winter, she became very ill, had a fever, and a rash, resembling that of scarlet fever, would cover her body. This illness usually lasted from one to two weeks. Under treatment the enlargement of the thyroid gland disappeared, all

her symptoms were relieved and neither last winter, when she was under treatment, nor during the past summer, after treatment had been discontinued, did she have her usual attack. From her description of these attacks I concluded that they were due to an auto-intoxication of intestinal origin, and their discontinuance during the treatment and after is a decided argument in favor of the theory of the relation between auto-intoxication, the sympathetic nerve system and the thyroid.

CASE D.—This patient's history was as follows: She has always had fainting spells at time of menstruation, which was irregular and painful; has palpitation almost all the time; is very nervous; very weak, the knees giving way when walking; has indigestion; is constipated; has shortness of breath, difficulty in swallowing, attacks of coughing, and dizziness. On examination I found decided enlargement of the thyroid gland, exophthalmos, a pulse of 120, tremor, tongue heavily coated and breath very foul, enlarged lymph nodes, tenderness at fifth to sixth cervical vertebrae, enteroptosis and extreme tenderness along the colon; also general muscular weakness. Examination of the nose showed the presence of an old atrophic rhinitis, which accounted for most of the foulness of the breath. Under treatment her improvement has been very marked; her pulse now is 80, enlargement of the thyroid much reduced, exophthalmos much less marked, tremor and all nervous symptoms practically gone; and all other symptoms decidedly better. Less than a week ago this patient told me that she was afraid that something was wrong, as she had menstruated without any pain or any necessity for going to bed.

In this case I believe that the involuntary swallowing of the foul secretion from the atrophic rhinitis was the exciting cause of the intestinal conditions that led to a sympathetic toxæmia and eventually caused the exophthalmic goiter.

Five other cases of exophthalmic goiter (E, F, G, H, I) now under treatment are improving. In one the exophthalmos is decidedly improved, the gland perceptibly reduced in size, the pulse rate lowered from 150 to 90 and the patient is feeling generally better. One other patient (J) was compelled to leave town after a few weeks treatment, but had been markedly benefited.

In some cases (L, M) that I have treated, the enlargement of the gland, with symptoms of perverted thyroid secretion, has been associated with some abnormal condition of the female generative organs, either laceration of the cervix, or injury to the pelvic floor or both. The result of High Frequency treatment has been to relieve all symptoms, but the improvement has not been permanent, the symptoms recurring in from six to eight weeks. There is no doubt that recurrence in these cases is due to further irritation of the sympathetic nerve system by the same

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factors that caused the enlargement and symptoms originally: and we may hope to effect a permanent cure only by referring these cases to the surgeon, for operation on the uterus and damaged pelvic floor. If, after such operation, the symptoms persist, a short course of treatment will, in all probability, relieve them, the exciting cause having been removed.

The cases with which I have had the greatest experience are those where there is enlargement of the thyroid gland with decided symptoms, but with little or no exophthalmos. Under treatment with High Frequency Electricity the symptoms gradually lessen in severity and finally disappear; and the enlarged gland is reduced to normal size, or so nearly normal that it is just palpable and no longer a disfigurement.

The first evident result of treatment is a general feeling of "betterment" with a lessening of the nervous symptoms; this improvement continues, the attacks of palpitation become less frequent and less marked, headaches disappear, the gastro-intestinal symptoms improve and menstruation becomes more regular and less painful. In most of these cases the loss of weight is one of the symptoms reported; in several instances where there had been no increase in weight during treatment I have learned a few months later that the patient *had* gained in weight after having been discharged, and weighed more than before the original loss. The gain in weight that is almost constant either during or after treatment I ascribe to the removal of the thyroid toxæmia and the consequent improvement in digestion and assimilation, due to the return to normal functioning of the secretory epithelium. In a number of cases, where in the first history the patient had said that there were no symptoms excepting the enlargement of the gland, I have been informed by the same patient after a few weeks treatment, that her headaches were so much better; or that she was less nervous; or that menstruation had become more regular. It was not that the patient deliberately wanted to deceive but the symptom had become so a part of the individual that until relieved it had been taken for granted as a natural condition.

During the past twenty months I have treated thirty-four cases of exophthalmic goiter and perverted thyroid secretion, with the following results:

Cases of exophthalmic goiter: Three practically cured; five

still under treatment, improving; one case not influenced; one case discontinued treatment.

Cases of perverted thyroid secretion: Twelve cases cured; six cases under treatment and improving; four cases discontinued treatment; two cases improved temporarily, due to pelvic conditions.

In conclusion I would say:

That in the opinion of the writer all cases of exophthalmic goiter and perverted thyroid secretion, excepting those due to definite tumors, degeneration or inflammation, are caused by a toxæmia or irritation of the sympathetic nerve system.

That treatment of such cases with High Frequency Electricity gives us better and more permanent results than any other methods of treatment, excepting where a resort to surgery is imperative.

That treatment with High Frequency Electricity has no effect on enlargement of the thyroid gland due to definite tumor or cyst, although the differentiation between enlargement due to a definite tumor, and colloidal enlargement is so difficult and uncertain in most cases that a resort to High Frequency treatment, preliminary to operation, would be justifiable and conservative.

In all cases of exophthalmic goiter and perverted thyroid secretion where an operation is to be performed, the patient should have, as a preliminary to operation, a course of High Frequency treatment, to the end that the distressing symptoms, especially the tachycardia and nervousness, may be lessened if not altogether relieved, and securing for the patient the best condition possible for surgical procedure.

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ELECTRICITY IN THE URIC ACID DIATHESIS.

*Read before the Medical Society of the County of Albany,
November 20, 1912.*

By E. A. BARTLETT, M. D.

In treating a subject so broad, a dyscrasia so far reaching in its effects, as the Uric Acid Diathesis much more time would be required to do it justice than we have at our disposal. The purpose of this paper, therefore, is to briefly outline some of the causes, and manifestations, touch lightly upon the etiology and symptomatology of the constitutional condition and suggest the value of electricity as one more weapon with which to fight it. Any contribution for the relief of a pathological condition so fraught with discomfort will be welcome. The constant formation of uric acid in the metabolism of proteids renders the individual, from childhood to old age, susceptible to it.

Uric acid is essentially a catabolic product the result of a transformation downward, and ultimately a waste product. Elimination, therefore, is the indication. Any condition or environment which tends to an increase in production or interferes with its elimination must be guarded against or removed if present. The consumption of large quantities of foods rich in nitrogen is an example of the former; clogging of the emunctories is an example of the latter; the skin, lungs, kidneys and bowels are important channels for elimination of all waste products. As to the skin, uncleanliness, exposure to dampness and cold and especially a paresis of the intrinsic muscles of the endermic tissues, muscles so necessary to free transpiration; as to the lungs, chronic catarrhal and respiratory disease; as to the kidneys, alteration of blood pressure and consequent faulty elimination; as to the bowels habitual constipation. These very briefly are some of the more important causes.

Of the symptoms it may be truly said they are protean. Common to and associated with a large number of diseases, they are found as cutaneous, cerebral, pulmonary, gastric, hepatic, renal, intestinal, muscular and articular. Rheumatism and gout were at one time considered as the exponents of the excess of uric acid and well they might have been, now, however, methods of

diagnosis have become so critical that it is conceded many other diseases are either wholly dependent upon this condition or are so influenced by it that their relief is dependent upon its removal. It is a safe procedure to estimate the uric acid and urea content of the urine in most cases not only once but many times in the course of treatment.

In our discussion of treatment it will be necessary to omit mention of the drugs and combination of drugs, the dietetic and hygienic suggestions all of which are so advisable. The purpose of this paper is, as stated, to give a few suggestions in the use of electricity, suggestions born of over thirty years' experience in its use. First then let me quote from the ARCHIVES OF ROENTGEN RAY; "from an electrical viewpoint the human body is to be considered as a mass of electrical cells enmeshed in a network of permeable osmotic membranes. The activity of these cells and the electric conductivity of the tissues depend on the concentration and chemical composition of the fluid which bathes them; this composition is practically constant and its presence is universal." In other words the living tissues are electrolytes. In the electrolytic solution the molecules, on the passage of a current become dissociated into two portions, one the anion carrying a positive charge and moving toward the cathode, the other the cation, carrying a negative charge and traveling toward the anode. It is upon this condition that phoresis depends and which makes possible IONIC medication. By means of this form of medication we have a most useful method of controlling the local manifestations of the constitutional disease such as pain, swelling, cutaneous affections and enlarged joints. Galvanism is called for and, with due regard for polarity, cocaine for pain, iodin for swelling and the salicylates for enlarged joints can be introduced without producing gastric irritation and profound systemic effects and still with an added efficiency due to the nascent state in which some substances are used. In stimulating the intrinsic musculature of the skin faradism with the wire brush is efficient. Faradism is also useful in overcoming the obstinate constipation which is almost ever-present. It is necessary that it shall be overcome since correct metabolism cannot occur in the presence of irritants to the epithelial cells of the intestinal mucous membrane. Faradism improves peristalsis. An application with one electrode on

the abdomen and the other in the anus will give prompt results while for the continuous application electrodes to abdomen and lumbar spine are preferable. Application of the static breeze and M. Morton's wave current may be made for stimulation of liver and spleen. The forgoing applications, well considered and intelligently applied furnish an elimination treatment not to be despised. But there is something more to be accomplished than to get rid of the offending substance; an effort must be made to check the excessive formation of uric acid.

If it is true that uric acid is produced (instead of water, carbonic acid and urea as terminal product) from proteid bodies by reason of faulty action occurring in the catabolic end of metabolism we may possibly have in electricity a force directly acting to prevent this faulty action since, during a course of treatment the urea content of the urine is increased. The production of ozone in the passage of high potential currents through the air, as in the high-frequency spray and the oxidation of fluids suggests another valuable point; its possible aid in the oxidation and cleavage in the metabolism of proteids where oxygen is essential; may it not produce an anabolic instead of a catabolic action. Theoretically, at least, electricity can enter the plasma of the cell. This being true it will inhibit production of poisonous substances and may stimulate the conversion of proteids into proteoses and peptones. Auto-condensation in conjunction with the electric light bath reduces arterial tension and increases elimination from skin and kidneys as is shown by perspiration and increase in urinary solids. In those conditions due to faulty metabolism like eczema, psoriasis and epithelioma the action of high-frequency currents has proved very satisfactory. The Roentgen ray is of great service in some of these conditions but as it is to be discussed later by another we shall merely give it honorable mention.

In conclusion, while very much more might be said, we may sum up the matter by saying, electricity in its multiform modalities furnishes a valuable means for eliminating uric acid and potentially, a valuable means for lessening its over production.

From the standpoint of the electro-physiologist the matter is one of very great interest.

THE HIGH FREQUENCY CURRENT IN THE TREATMENT OF HIGH BLOOD PRESSURE.

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The high frequency, high potential form of electricity differs so materially in its effects on the human system from the older, better known methods of electrical application such as static, galvanic and faradic currents, that it seems appropriate to give first a very brief resume of some of the differences and effects of the newest form of electrical energy, the high frequency, high potential current.

In 1891 Nicola Tesla demonstrated before the American Institute of Electrical Engineers, an entirely new form of electrical discharge and gave to it the name of high frequency.

A high frequency current is one in which the cycles, a cycle being one positive and one negative wave, exceed 10,000 cycles per second.

When a very slowly interrupted medical current is applied to a muscle, it produces a sudden muscular contraction, followed by relaxation; with a little higher frequency, *i. e.*, more rapid interruption, as in the faradic current, the muscle is thrown into tonic contraction, if the amperage is considerable pain is produced; but when both voltage and amperage are increased, not only is a single muscle but whole groups of muscles become convulsively contracted, and when still further increased the whole body, with every muscle both voluntary and involuntary, is thrown into tetanic spasm and life becomes extinct.

When, however, the frequencies or interruptions become greater than 10,000 cycles per second, the muscles no longer appreciate the stimulus and do not contract, and pain is no longer felt. Hence this frequency is put at the lowest limit of high frequency currents.

As used in medicine the frequency runs much higher than this low limit; the cycles usually running from 200,000 to two millions per second, and with the tremendous voltage of from 10,000 to half a million volts.

Both frequencies and voltages much in excess of these limits, may freely be passed through the system, but when given much higher than the limits mentioned, they gradually lose their therapeutic properties on the human system.

Just what is the best frequency and the most advantageous voltage for its effects on the body has yet to be scientifically demonstrated. Differenet types of apparatus, and different sources of energy, give somewhat different voltages and frequencies, yet all those that produce energy within the limits mentioned are capable of inducing physiological actions and producing therapeutic effects.

We all know that the ordinary street current of 40 to 60 cycles and 110 volts, if passed through a person will almost instantly kill him. What has happened then to the current which has been stepped up to say half a million cycles and one hundred thousand volts to change it from a tetanizing burning deadly current to a mild sedative or slightly stimulating one, which passes through the body not only without harm, but often without the person being conscious that he is in the electrical circuit.

The current of electricity is analogous to a current of any other fluid such as water and is enacted upon by such similar forces as quantity or amperage, pressure or voltage, and resistance. The following simile has been given to explain the common effects.

The overflow of a lake may pass out as a placid stream, quicken over a gentle decline, rush over the resistance of rocks in a rapid, or through a rapid defile, or plunge over a precipice as a waterfall; on striking the resistance of the rocky bottom it is dashed into spray. In electricity the primary cell is the lake, the unbroken stream the low voltage, galvanic current, the broken rapids with the increased pressure the faradic current, the falls the high voltage, and the spray produced by the tearing apart of the cohesion of the solid falls by the rocks, is the high frequency high potential current, or better vibrations. A person struck by the solid water of the high waterfall would be instantly killed, but can stand unharmed in the mist when the water is dashed into spray. A sufficient fall of unbroken water will wash away and destroy trees, plants and soil; the gentle spray nourishes them and stimulates their growth.

In like manner the large amperage and low voltage electrocutes a man, the atomized spray of the high frequency high potential vibrations nourishes the individual cells of a person, and often restores morbid functions to a condition of health.

By the great increase of frequency and voltage the physical character of the electricity is thus entirely changed. The high frequency current can no longer drive a motor as it did, the electrolytic action is gone, ordinary insulators do not confine it, it passes through glass as readily as does sunlight, it requires no longer a closed metallic circuit; it escapes from a single pole; it is thrown out into the air as ether vibrations and so is used in wireless telegraphy. On the human body its properties are: it does not kill; it does not tetanize or even contract muscles; unless concentrated at a point it does not burn; it does not cause pain; the body seems to offer but little resistance to its passage as is seen in the x-ray photographs. No matter where it enters the body it penetrates every organ and tissue, and when a Geissler tube is held by another person near to the person saturated with the electricity, the escaping vibrations will light the tube, even when held for instance close to the shoe of the person taking the electricity.

In its passage through the body it seems to contract or modify the vibrations of individual cells everywhere, in such a way that it changes or stimulates abnormally vibrating cells bringing them back to their normal vibrations, and thus restoring their health and function, as well as stimulating healthy cells to increased action.

Its action is thus physiological, and the fundamental value of this form of electricity seems to lie in the power of regulating and stimulating all nutritive processes.

From a series of physiological experiments conducted on animals and human beings, d'Arsonval, the French investigator, and others have arrived at the following conclusions:

1. The respirations are quickened and deepened.
2. The heart beats more easily.
3. The tension in the arteries is reduced.
4. The internal combustion, *i. e.*, the intake of O and the excretion of CO₂, are both much augmented.
5. The rate in the reduction of haemoglobin is increased.
6. The leucocytes and phagocytes become more numerous.
7. The body temperature slightly rises.
8. The elimination of the urinary solids as uric acid, urea, phosphates, sulphates, and chlorides are all increased.

9. Perspiration is readily induced, with the still further elimination of excrementitious substances.

10. Glandular action is increased.

Thus all the metabolic processes are stimulated.

From this rapid survey of the properties of this form of electricity let us turn to a consideration of its action and effects on our particular topic, that of high blood pressure.

When a person is placed in the circuit of a d'Arsonval current, *i.e.*, one of high frequency, moderate voltage and high amperage, the particular form of application being called auto-condensation, the patient at first experiences no sensation. Very shortly the operator notices, and the patient sometimes is conscious that he is breathing somewhat more deeply and fully. Then a feeling of warmth appears in the wrists, the patient holding the metal electrode in his hands. This feeling of warmth gradually extends over the whole body; a gentle glow permeates his system, and if the treatment is kept up long enough with considerable amperage, he breaks out into a perspiration. Occasionally he is conscious that his heart is beating a little more forcibly. These are the only sensations of which he is conscious, and all are agreeable in character.

If the blood pressure of a person who has hypertension is taken before the electrical treatment, and again directly afterwards, it will be found to have fallen, the fall in millimetres of mercury varying with different individuals, but in general the higher the tension the greater the fall, provided marked arteriosclerosis be not present.

In most of my patients, with the type of apparatus that I use, the average fall is about ten millimetres. It often falls somewhat lower during the first hours, and then gradually rises during the succeeding 24 hours, but usually not quite so high as it was before the treatment. The first treatments may not keep it down for 24 hours, but each succeeding day, if the electricity is given daily, the tension stays lower for a longer time. Usually within a fortnight it stays down longer than 24 hours, and then the treatment is given on alternate days, and so gradually the interval between treatments is lengthened to once a week, or even once a fortnight.

The sudden lowering of the blood pressure by this current inclines one to think that it acts on the vaso-motor nerves most

strongly; and very likely it does; but if it acted on the nervous system alone, one would expect that as soon as the stimulus was removed the tension would quickly rebound to its former height, the underlying cause of the high pressure not being removed. Such is not the case. The persistent effect induced leads us to look elsewhere for the explanation of the more permanent results that are produced.

Its action must be to modify and improve the underlying pathological processes that are causing the high blood pressure.

The physiological effects as determined by many investigators which were enumerated a few minutes ago, all point clearly to the powerful action of high frequency currents on all metabolic processes. Clinically physicians who have used this current have universally found it beneficial in almost all cases of faulty metabolism and impaired elimination in which the pathological processes have not caused the destruction of the tissues.

The paper of this series which you have listened to on "High Blood Pressure of Alimentary Auto-Toxic and Metabolic Origin" brought out quite clearly the importance of toxic products in producing hypertension. With this view I am strongly in accord, and believe that intestinal putrefaction is the fundamental, and most frequent cause of high blood pressure in individuals after middle life, especially in those who are high livers, who are under great nervous and business strain, and who do not take a proper amount of exercise; many of whom increase their tension further by interfering still more with their metabolic processes by the excessive use of alcohol, tea, or coffee.

Personally I believe that hypertension due to intestinal intoxication almost always precedes renal and cardiac changes and that it is the toxic substances absorbed from the intestines which induces the renal, cardiac, and arterio-sclerotic changes, which are so frequently associated with high blood pressure, and not that the Bright's disease is the cause of the hypertension.

The following case is an illustration of the general effects of the high frequency current on a person in the earliest stage of Bright's disease, before renal symptoms were demonstrated.

I was called one evening to see a man of 56, who an hour or two before had eaten a hearty meal, and who was feeling rather dizzy and strangely in the head. His face was deeply

flushed; the conjunctiva reddened, the temporals throbbing, the pulses full, hard, and with evident high tension. The heart was very slightly hypertrophied, and beating so forcibly that he was conscious of it. The second aortic sound was loud and ringing. His urine was normal. His general appearance suggested an impending apoplexy. He was given at once a vasodilator and a rapid cathartic. The next morning he felt pretty well again. At my office on taking his tension I found it to be 192. I suggested as treatment the high frequency current instead of drugs. The first application brought down the tension ten points, on succeeding days his blood pressure gradually lowered so that in less than a fortnight before each application it was about 170, and after the treatment about 160. At the outset wishing to test the effect of the current alone he was given no drug, no change was made in his diet, and no mental suggestion was made as to his condition or improvement.

About a fortnight after commencing treatment he volunteered the information that he was feeling better in every respect. He is a consulting engineer, and has to compute difficult mathematical problems. He said that ordinarily he likes to do brain work, but that for some time before taking treatment, work had been a great effort, and that he had difficulty in concentrating his attention for any length of time, and that he tired easily. Since taking the treatment these disagreeable symptoms had all passed away, and he felt like work again.

On another occasion he said that he could now sleep much better than he could before. That previous to taking the treatment he could not lie on his left side. He was conscious of his heart beating and that it seemed to smother him. Now he could lie in any position without discomfort.

Still another time he said that the treatment seemed to be making a young man of him, as far as his eyesight was concerned; that there was on the building across the street a large vine, which had hitherto been simply a blur of green, but that now having taken the treatment about a month, he could distinguish the individual leaves. On being requested to test his sight in some different way, he later reported that an awning over a store that he passed every day had seemed to have alternate broad stripes of light and dark brown; now he was able to distinguish that one of the stripes was made up of several

narrow stripes of different shades, that he had been unable to differentiate or appreciate before.

I then restricted his nitrogenous diet to meat once a day; he was averaging about once a week with the treatments, his tension being about 170. One day on taking it I found it to be 190; on questioning him he confessed that he had eaten largely the day before of sausage. The sudden rise of tension being clearly the result of auto-intoxication from faulty metabolism, or perhaps to some toxin in the sausage itself.

Whatever the toxin was, the chemical composition seemed to be in the nature of a colloid, probably a nucleo-albumen, because with daily treatments, it took nearly 10 days before I could get the tension permanently down to 170. Had the toxin been a crysteloid it should have been eliminated inside of 48 hours. His improvement has been continuous and he now feels perfectly well.

Had this patient not taken high frequency treatments I believe that in a few months, or a few years at the most, the intestinal toxins would gradually have produced a condition of hopeless chronic Bright's disease. Of course a patient cannot judge whether his physician has really cured him, or has arrested his tendency to a disease and is prolonging his life, but the general feeling of well being that he experiences after taking the treatments, and the improved mental and bodily efficiency that he enjoys, the pleasure that he gets out of life, instead of being depressed by its burdens, make him content to continue his treatments.

From this necessarily incomplete and rapid study of the subject, I should like to offer the following premises and deductions:

The premises are:

1. The underlying causes of most cases of high blood pressure is metabolic, from faulty digestion of food.
2. The hypertension usually precedes renal, cardiac, and arterio-sclerotic changes.

The deductions are: That by proper treatment with high frequency currents:

1. The general condition, and especially the metabolic processes are improved.
2. When, aided by the sphygmomanometer, hypertension is

recognized early, we are able to cure the initial stages of the disease, because we remove the exciting cause.

3. That we can prevent the actual development of Bright's disease.

4. When renal or cardiac lesions are already present, that we can check the rapid advancement of the pathological process and thus lengthen life.

5. In the later stages of the disease, when compensation has broken, and the heart has begun to fail, that by lowering the tension we lessen the resistance that the enfeebled heart is obliged to overcome and so we can alleviate some of the symptoms, and make the patient more comfortable.

6. By its effect in lowering arterial tension, we protect the brittle blood vessels from the liability of rupture, and we can thus lessen and minimize the danger of apoplexy.

THE GENERAL TREATMENT OF HIGH BLOOD PRESSURE.

Part of a General Symposium on the Etiology and Treatment of High Blood Pressure, read at the Thirteenth Annual Meeting of the American Therapeutic Society, Montreal, May 31, 1912.

By SPENCER L. DAWES, M. D.,
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The general treatment of high blood pressure would naturally include the treatment by manual methods, regulated movements and neutral immersion baths, by the means of electricity and by sodium nitrite; but as papers on each of these particular methods appear in the Symposium and will presumably discuss those methods in detail, they will not be considered under this head. General treatment may be divided into: (1) prophylactic, (2) curative, and (3) symptomatic.

(1) A regulation of the habit of the individual as to diet, exercise and excretion are the prophylactic measures indicated. Many authorities have arrived at the conclusion that while a regulation of the component parts of the daily ration is of value, a far more important factor is in the limitation of the amount of food consumed. For certainly we must all agree that the best preserved, the most healthy, as well as the least senile of our patients, are those who are temperate in their

habits of eating and drinking. Nevertheless it is a fact that a non-nitrogenous diet, with a preponderance of fruits and vegetables, is desirable; while a certain limited number of observers prohibit milk, eggs, cheese and other articles of diet which are rich in lime salts, and others are insistent that the limitations of the intake of proteins is a factor which should be considered of importance.

Modern, rational and, above all, systematic exercise will do more to prevent sclerosis of the arteries, and its accompanying hypertension, even than a regulation of the diet. And in addition to this, most active American business men should obtain at intervals, certainly once each year, the relaxation attendant upon a sea voyage or a period in the actual country away from the excitement of business and society. The digestive apparatus should be kept in the best possible condition and constipation avoided, or, if the latter be present, overcome rather by a regulation of the diet than the administration of drugs.

(2) Here we should pay our first attention to causation, such as gout, syphilis, the excessive use of alcohol and over-indulgence of all kinds, for, after all, we must admit that high blood pressure is rather a symptom than a disease. By far the most popular of all drugs used with the idea of cure is iodine in some form, given oftentimes to the point of toleration. While potassium iodide is probably most frequently used in this country, the greater number of the French and German clinicians prefer sodium iodide, believing it to be better borne by the digestive tract; and latterly, many so-called organic preparations of iodine have been introduced and highly recommended by the pharmaceutical houses which are sponsors for their birth. Whichever of the salts of iodine are used, however, it is usually given in the form of a saturated solution, starting with two drops (which, of course, represent about two grains of the drug) three times each day, and each day the size of the individual dose is increased by one drop until fifteen drops are reached, if the stomach does not rebel. This dosage then is continued or persisted in with occasional intervals of omission a week or so at a time for several years. Balfour's method in the treatment of aneurism with attendant high blood pressure he states to be as follows: "So soon as the average pulse-rate in recumbency is accurately ascertained, two grains of potassium

iodide are given every eight hours, and if the pulse-rate remains unchanged the dose of iodide may be increased up to fifteen grains or more every eight hours, raising it by one grain each dose until the pulse-rate begins to rise. It is only rarely that we can increase the dose beyond ten grains without this taking place. When the pulse-rate begins to rise the iodide is stopped for one or two days, and then we go back to the highest dose that did not raise the pulse-rate and continue the dose."

This use of iodine is often attended by unpleasant digestive symptoms as well as other evidences of toxemia, and its value rests more upon empirical evidence than upon accurate measurement of the blood pressure with a manometer, and its use is almost as strongly deprecated as it is highly commended. It is most desirable, in the use of iodine, to recollect that it should not be administered during the period of digestion, because not only is it theoretically a fact that iodine and starch produce an insoluble iodide of starch, but because of the disagreeable effects of iodine upon the digestive tract, too well known to need description here.

(3) Unfortunately most of our efforts must be directed toward relief, for the majority of our patients do not come to us until a distinct arterio-sclerosis is established, and, as we have already seen, it is more often than not impossible to benefit them by curative treatment. One of the most ancient methods of the treatment of high blood pressure, as well as the most popular, was venesection, abandoned because of abuses attendants upon its use. Nevertheless, in appropriate cases it often gives brilliant results. Says Wilks: "You see your patient sitting up in bed, the face calm and lips blue or purple, and the jugular veins starting out of the neck and often visibly pulsating, the heart beating quickly and perhaps a tricuspid bruit, indicating the gorged right heart and obstructed lungs; the veins in the body are full to bursting." And here, as well as in uremia, eclampsia and certain cases of cerebral hemorrhage, emphysema and pulmonary engorgement, the removal of ten to twenty ounces of blood will prove a most satisfactory remedial measure. Results as gratifying to the physician as they are pleasing to the patient often attend upon the free use of calomel or the mass of mercury, followed by a brisk saline purge, giving relief not only by the withdrawal of fluid from the intestinal

viscera, with a consequent lowering of arterial tension, but by the removal from the intestines of toxic material which, by its absorption into the circulation, increases the blood pressure, to which, I am sure, each one of us can testify.

Where there is intestinal torpor, with decomposition of the animal food, the use of the lactic acid tablets (*bacillus Bulgaricus*) may be employed with happy results, overcoming not only digestive disturbances and the accompanying borborygmus, but the secondary production of hypertension. The promotion of free diuresis in certain types of cases where there is an inefficiency of the skin and kidneys and myocardial degeneration, with or without valvular disease, is often of great help. Here digitalis is of greatest value, notwithstanding the fact that primarily it increases the arterial tension, because of its effect on the heart as well as upon the secreting functions of the kidney. And for the same reason sodio-salicylate of theobromine often is helpful, and while the effects of this latter drug are, in the main, through an increased secretion by the kidneys, yet it has a direct effect upon the vaso-motor centre in the medulla, and thus, secondary to this, an effect upon the blood pressure; and a combination of these two remedies has, at times, in my experience, given results which, to the patient at least, seemed almost miraculous.

For immediate effect upon hypertension, as well as for continued use over a long period, no class of drugs equals the nitrites, and of these what is most frequently employed is what is generally although improperly, spoken of as nitro-glycerine. Unfortunately the effect of the nitrites is evanescent, and the appropriate dose must be repeated at frequent intervals in order to prevent the secondary rise in temperature which usually follows its primary effect. The physiologic effect of the nitrites is to relax the arteries through their influence on the vaso-motor system, and, as is generally the case with all rapidly acting drugs, the primary effect is not only transient but is followed by a secondary effect directly the opposite. In addition, if large doses are given over a long period (which is the best way to give them), we are in danger of lowering the blood pressure to a point where the secreting function of the kidneys is unfavorably affected. For rapidity of action in extreme cases, amyl nitrite is the most efficient; but its fleeting effect, as well as its dis-

agreeable smell, makes it undesirable for continued use. As has been noted, nitro-glycerine is most in favor, but many careful observers are strong in their preference for sodium nitrite.* Erythrol tetranitrate has lately been much lauded, and it has the advantage of producing a more lasting effect; but it unfortunately is an exceedingly expensive drug for prolonged use, which is just what we need it for. It should be stated that the dosage of nitro-glycerine, as well as the frequency of the dose, is many times greater than is commonly supposed. In this connection I cannot help but quote what Le Fevre says: "In the treatment of cardiac and renal diseases, the greatest danger, next to the abuse of digitalis, is the unjustifiable administration of the nitrites. High arterial tension is relatively a compensating condition, and it is to be treated only when it becomes excessive. The action of the nitrites is transient, and the use of large doses at frequent intervals is apt to produce increasing irritability of the cardiovascular system, and the patient is more liable to suffer from dyspneic attacks. There is also danger of the nitrites reducing the tension temporarily below the point at which the kidney secretion can be carried on." Not all cases where there is high blood pressure demand or even admit a reduction of the tension, for as long as cardiac powers compensate for obstruction in the circulation no special treatment is needed.

A CLINICAL AND PATHOLOGICAL REPORT OF A CASE OF PRIMARY MALIGNANT DISEASE OF THE PLEURA.

*Read before the Third District Branch, Medical Society of the State
of New York, October 1, 1912.*

By HARRY S. BERNSTEIN, M. D.,

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The pleural surface is a relatively infrequent site of primary malignant disease. Only about forty to fifty properly substantiated cases have been recorded to 1905. I am indebted to Dr. J. Howard Branan of Albany for the opportunity of observing a case of this character. The clinical and post-mortem features are now presented for your review.

* Discussed elsewhere in the symposium.

The case is that of a woman, aged 69. The family history was negative. Her past history was likewise negative, save for suspected "lung trouble" twelve years ago; from this condition, however, a good recovery had been made. The present illness dates back two months before she came under observation. The chief complaint was that of dyspnoea on exertion, and neuralgic pains radiating from the left side of the chest. Walking up-hill or upstairs or walking too far was accompanied with palpitation of the heart and dyspnoea. In addition, the patient had become irritable, and although she had kept her usual weight, there had been a marked loss in strength. Cough was absent. On December 29, 1911, the first physical examination gave signs of fluid within the left chest. The temperature and pulse were normal. Thoracentesis yielded twelve ounces of a dark straw colored fluid. On January 8th, ten days later, forty-eight ounces of a similar fluid were withdrawn. On January 14th, thirty-two ounces, and on January 24th, sixty-five additional ounces were obtained. Thus within a period of one month, one hundred and fifty-seven ounces were withdrawn.

There had been meanwhile no elevation of temperature and pulse. Physical examination after the last tapping was as follows:— Patient was emaciated, and of a sallow complexion. Respirations were rather rapid and superficial. The left chest was more prominent than the right and motionless. The right border of the heart extended one finger's breadth outside of the right sternal margin. The cardiac area was otherwise undeterminable. The apical sounds, however, were audible well within the mammary line. The left chest anteriorly was flat to the 6th rib. Breath and voice sounds were absent over this area. Posteriorly, dullness extended over the left chest. The respiratory sounds were transmitted but faint; and the expiration was high-pitched and prolonged. Rales were absent. Over the lower half of the chest, whispered voice was to be heard, and spoken voice possessed a nasal quality. Tactile fremitus was diminished. The respiratory sounds in the right chest were exaggerated and harsh. Other observations were negative.

Since these signs were obtained the day after the last tapping, the flat percussion note and absent respiratory murmur in the anterior part of the left upper chest pointed to a well marked

pathological process in that region. The whispered and spoken voice in the lower posterior part of the chest were consistent with compression of the lung, as a result of the accumulations of fluid. The faint breath sounds and diminished tactile fremitus suggested an extensively thickened pleura. Three possibilities were considered as likely causes of this unilateral hydrothorax: (1) Cardiac insufficiency, (2) tuberculosis, (3) malignant disease.

Although a left-sided cardiac hydrothorax is rare, the condition nevertheless occurs. Stengel¹ reports three such cases in a series of seventeen pleural effusions. Lord encountered six in a series of thirty cases. An effusion into the right pleural cavity is commoner. An extensive right-sided hydrothorax associated with a chronic obliterating pericarditis proved an interesting post-mortem find in this laboratory.

In the case under consideration, the absence of the classical signs of an adherent pericarditis, and the good quality of the heart sounds pointed against cardiac insufficiency as a cause of the fluid. Now the facts against tuberculosis seemed to favor the third possibility, that of malignancy. The advanced age of the patient, the afebrile course of the disease and the rapid recurrence of fluid made tuberculosis an improbability. This was subsequently confirmed by animal inoculation.

On January 17, 1912, a specimen of chest fluid was examined. No tubercle bacilli or other organisms were seen in smear preparations from the centrifugalized sediment. Cultures were sterile at the end of forty-eight hour's incubation. Two guinea pigs were inoculated subcutaneously with the sediment. Neither pig showed evidence of tuberculosis in gross and microscopic, four and six weeks respectively after inoculation. The cytological features of the fluid were of relative value in favoring malignancy. It must be recalled, however, that the fluid on repeated tapping remained deep straw in color, from which a jelly-like coagulum and abundant greyish deposits separated out after standing. The experience usually is that in conditions of malignancy the pleural fluid at first may be serous, but later becomes strongly haemorrhagic. Smear preparations showed the presence of lymphocytes, eosinophiles, and many clusters of large nucleated cells. The latter were ten to twelve times larger

(1) STENGEL. *University of Pennsylvania Medical Bulletin*, June, 1901.

in diameter than the small lymphocytes. (Fig. 1.) Their nuclei possessed a reticular framework. Repeated search revealed no mitoses.

The diagnostic value of cells in effusions has given rise to much discussion. An extreme view is that large cells in cases of stasis cannot be distinguished from those occurring in malignant conditions. Widal and Rivaut² emphasize the difficulty of recognizing cancer cells as such, owing to their similarity to endothelial cells. They base their opinion on a study of cells in six hundred exudates. Emerson states "It is true that in some cases of so-called proliferative pleurisy or peritonitis there are found a great many free endothelial cells and large groups in mulberry-like masses in the fluid. It is also true that these endothelial cells undergo degenerative changes"

It seems that neither the presence of large cells in serous fluids nor the occurrence of mitotic figures within the cells are absolute indications of malignancy. Warren³ reports three cases of malignant disease involving the peritoneal cavity in the exudates of which mitotic figures were observed. The cases on record in which similar observations have been made are few in number. Warren, in a review of the literature, found only seven cases "in which exudates due to malignant disease showed free cells undergoing mitotic divisions." Yet many writers have recorded cases of malignant character in the fluids of which mitotic figures were not found. Curiously enough, the literature contains two cases of non-malignancy, the exudates of which showed mitoses.

In the light of the foregoing experience, the presence of clusters of large nucleated cells in the exudate of the case under consideration, warranted no absolute diagnosis; yet this finding, added to the evidence already cited in favor of malignancy, became significant and confirmatory.

The pathological process, if the physical signs were correctly interpreted, had wide distribution over the pleural surface, more marked in the upper and anterior chest wall. The fact that the patient had no cough and raised no sputum excluded the possibility of extensive, if any, pulmonary involvement. A case recalls itself in which a metastatic growth in the left lung had

(2) VIDAL and RIVAUT. *Comp. rend. Soc. de. biol.*, 1900, Lii, 646

(3) WARREN. *Archives of Internal Medicine*, 1921, Vol. 8, pp. 648.

occurred, secondary to a carcinoma of the right adrenal body. During life the prominent symptoms were cough and expectoration.

With the evidence thus far in favor of a malignant process and its possible location confined to the pleura, the question of a primary or secondary involvement arose. The lack of physical signs and symptoms referable to the genital organs, intestinal tract, and breast ruled out three likely sources of primary malignant disease.

After the last tapping, the patient gradually lost ground. Weakness and emaciation became more marked. Attacks of hiccough and nausea added to her discomfort. February 1st, the temperature began to show a rise, varying from 99° to 100°. There was also a slight increase in pulse rate. One week later, the patient developed chilly sensations. The temperature went up to 101° to 103°, the pulse rate varied from 110 to 130. She then sank into coma and died. Her critical condition was regarded as a contra-indication to further tapping. Thus death came three and half months after the onset of symptoms.

The autopsy was restricted to the examination of the thoracic, abdominal, and pelvic organs. The right pleural cavity had a few firm interlobar adhesions. Its surfaces were otherwise normally smooth, moist, and glistening. The left pleural cavity contained about two litres of a turbid straw colored fluid with numerous flocculi. The surfaces were dull and lustreless. The parietal pleura was everywhere thickened, averaging 0.5 cm. on section. It was of a tough leathery consistence, and greyish in color, presenting a trabeculated appearance. Scattered about were discrete nodular thickenings, varying from 0.5 to 1 cm. in diameter. A few of these presented a cauliflower-like growth. They were more numerous on the diaphragmatic and on the anterior parietal pleura. One nodule, at the level of the second rib, anteriorly, extended to the visceral layer into the lung, causing a marked puckering of the lung substance. The area of extension measured approximately 2 x 1.5 cm. The pericardial sac was displaced far to the right, so that the apex of the heart was on the vertebral column. The sac contained about 300 c.c. of a yellowish turbid fluid, cultures from which were sterile. The right lung was voluminous. Crepitus was present throughout, but diminished in the posterior portion of the lower

To Illustrate Dr. Bernstein's Article on "Primary Malignant Disease
of the Pleura"
Albany Medical Annals, February, 1913

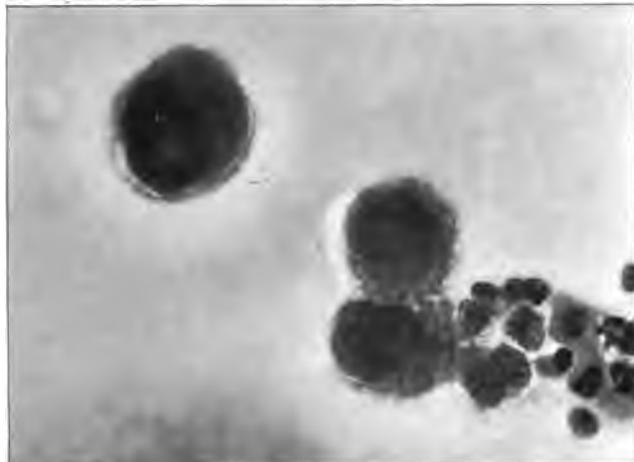


FIG. I. Smear from centrifugalized sediment of pleural fluid showing a few white cells and a cluster of large nucleated cells.

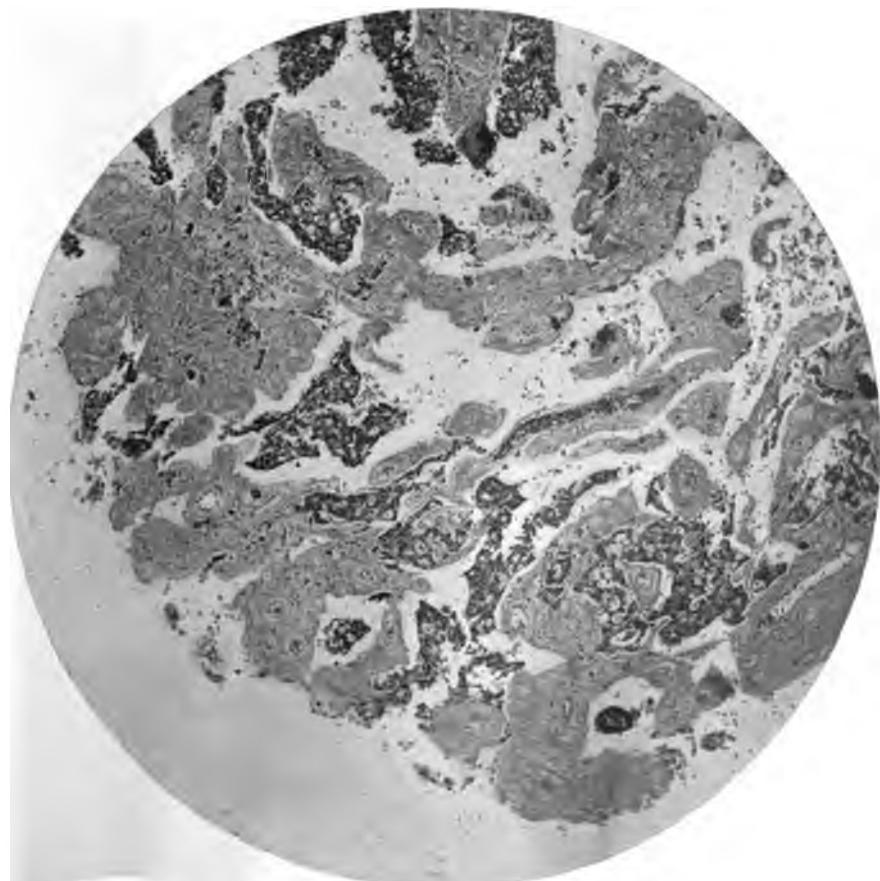


FIG. II. Low power of a section taken through a wart-like mass of tumor showing relation of tumor cells to connective tissue stroma.

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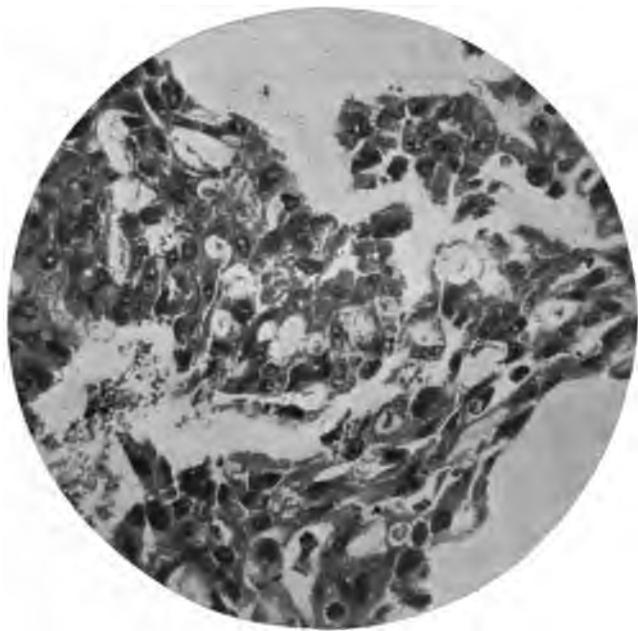


FIG. III. High power of tumor cells showing variation in form

lobe. The left lung was collapsed and lay close to the spinal column. It was firmly adherent to the chest wall, making its removal difficult. Crepitus was diminished and the consistence of the lung tissue was considerably increased. The other organs were not remarkable in gross and microscopic.

Histologically, sections of the pleura show an abundant connective tissue stroma and tumor cells. In places, the stroma is oedematous, and is infiltrated with lymphocytes and plasma cells. In addition, there are also foci of perivascular infiltration with these cells. The blood vessels are only slightly increased in number. The tumor cells are wholly confined to the lymph-vessels and lymph spaces; and they vary not only in size and shape, but also in arrangement. In the small lymph spaces, the tumor cells are elongated and lie end to end; occasionally they form solid cords. In the larger lymph spaces, the cells form epithelial-like masses, having an alveolar arrangement. The tendency towards tubule formation is striking, and cells so arranging themselves as to border upon round or oval lumina. A lumen may be bounded by two single cells; and there may be as many as four to six lumina amongst the large clusters of cells. Within these intercellular spaces, debris in varying amount is found. The shape of the tumor cells is subject to much variation, the long flattened endothelial-like cell representing one extreme, and the polymorphous epithelial cell the other extreme. The nuclei may be round or ovoid. They possess a reticular network, but are poor in chromatin. Some are lobulated, as if undergoing direct division. The protoplasm consists of finely granular material. In some cells, vacuoles are present which suggest a dissolution of their protoplasmic content.

It is noteworthy that the endothelial lining of the larger lymph spaces remains distinctive. In some, however, there is a gradual transition from the type endothelial cell to the large epithelial tumor cell. Many sections of the pleural wall failed to demonstrate its serous membrane. Areas of necrosis were relatively few in number. The wart-like masses of the tumor, to which reference has been made, presented strands of connective tissue projecting into the cavity. These were surmounted by masses of the tumor cells. (Figs. II and III.) In many places, this connective tissue stroma had undergone hyaline change. It

is likely, therefore, that the cells found free in the pleural fluid came from this source.

Although there was no evidence of metastases, the tumor had extended to the lung by contiguity of surface. In six of the reported cases of primary malignant disease of the pleura, no metastases were found.⁴ The area of lung involvement, previously mentioned, was intimately adherent to the adjacent pleura of the upper anterior chest wall. In microscopic section, the tumor cells showed the same characteristics as in the pleural layers. The cells, moreover, were closely applied to the alveolar wall. Necrosis was more marked. Owing to the presence of tumor within the lung, the question may be raised whether the growth on the pleural surface is primary. This question cannot be definitely settled. Nevertheless, the extensive pleural involvement compared with the small area of lung involvement and the absence of symptoms early in the course of the disease, referable to an intra-pulmonic process, indicate a primary pleural condition.

The nomenclature of the tumor has also given rise to much discussion. Now it will be remembered that the primitive body cavity, or coelom, is lined by one layer of cells. Since this layer of cells is derived from the mesoderm, the term mesothelium has been applied. Adami, consequently regards this class of tumors as mesotheliomas, originating as he believes, from the mesothelial lining of the serous cavity. Ziegler classifies the tumor as an endothelioma, because the cells are endothelial in character and their growth limited to the tissue spaces. Ribbert, moreover, regards the tumor as a true carcinoma, and maintains that the character and location of the growth are secondary features. Thus two conflicting opinions are encountered; one regards the pleural epithelium, the other regards the endothelium of the subpleural lymph channels as sources of the tumor. Aschoff holds that the two conditions may coexist, and that in some cases it is difficult, if not impossible, to determine the source. He, therefore, leaves the classification "in suspenso."

In the case under consideration, it may not be amiss to apply the term "lymphendothelioma." The relation of the tumor growth to the lymph channels was evident. In no section was

(4) LORD. Diseases of the Pleura. Osler's Modern Medicine, Vol. III, pp. 860.

it possible to observe the relation between the tumor cells and the pleural lining. If we accept the view that the lymph channels were primarily the seat of tumor growth, and that this resulted in a disturbance of the lymph circulation of the pleural cavity, we can readily explain the non-haemorrhagic character and the abundance of the pleural fluid.

Editorial

For although it be a more new and difficult way, to find out the nature of things, by the things themselves; then by reading of Books, to take our knowledge upon trust from the opinions of Philosophers; yet must it needs be confessed, that the former is much more open and less fraudulent especially in the Secrets relating *Natural Philosophy*.

Anatomical Exercitations, 1653.

WILLIAM HARVEY.



To many physicians, especially the older ones, **William Beaumont and Alexis St. Martin** recalls an incident of the undergraduate class in physiology, when the fistulous stomach was impressed as one of the curiosities of medicine, which may have come down through the ages with almost mythical significance. Although this contribution to the knowledge of the processes of digestion is not yet a century old, there have been few studies of its history. With the exception of a memorial upon Dr. Beaumont's death, presented before the St. Louis Medical Society in 1854, by Dr. Thomas Reyburn, little attention has been given to these discoveries until within a few years. And yet the life of Dr. Beaumont and his relations with St. Martin were replete with romance and concerned with the stirring adventures incident upon the frontier life of America a hundred years ago. The long unfulfilled task of collection of these memoirs has at last been accomplished, and to Dr. Jesse S. Myer are the historian and physician indebted for the completion of what appears to have been a most exacting task.

Dr. Myer has published the "Life and Letters of Dr. William Beaumont, including hitherto Unpublished Data Con-

cerning the Case of Alexis St. Martin.* He has brought to his task a well-trained mind, particularly adapted to discriminate upon a vast amount of material, and has been unsparing of effort in his search. The lack of condensed medical literature upon the subject has necessitated the examination of many public documents and records, and of private correspondence, a difficult labor, as the subject of his sketch travelled so widely. It is little to say that Dr. Myer has done this work thoroughly; his book is an achievement.

Dr. Beaumont was born in 1785 in Lebanon, Conn., coming of a distinguished ancestry of renown in the annals of France and England before the Norman Conquest. He was a restless youth, and with "an outfit consisting of a horse and cutter, a barrel of cider, and one hundred dollars of hard-earned money," left the parental roof, and in 1807 arrived at Champlain, New York, near the Canadian frontier. He taught school, studied medicine in Burlington with Dr. Pomeroy, and began practice in Plattsburgh, N. Y., in 1813. On his departure from home he had experience with the rough quarrels of the border and was quite prepared for service in the War of 1812, for which he obtained a commission as "Surgeon's Mate." He was engaged in many battles on the Canadian frontier and great lakes, and the description of his experiences here forms a vivid chapter of our country's history. He remained in the service of the United States for many years, fearless, not only in his duty to his patients, but in commentary upon the administration.

In June, 1822, while on duty at Fort Mackinac, he was called to attend St. Martin. St. Martin was a Canadian voyageur or trader.

The voyageurs, like the "coureurs des bois," formed a sort of fraternity, gradually developed through the demands of the fur trade. They were French Canadians, sprung from the "habitant class," but differing from the habitant in that they were of a roving disposition, and at home only in and on the water. Once on land, however, he becomes a shiftless fellow, spending his time in revelry and dissipation

* *Life and Letters of Dr. William Beaumont, Including hitherto Unpublished Data Concerning the Case of Alexis St. Martin.* By JESSE S. MYER, A. B., M. D., Associate in Medicine in Washington University, St. Louis; with an Introduction by Sir WILLIAM OSLER, Bt., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England; with fifty-eight illustrations. St. Louis, C. V. Mosby Company, 1912.

until the hard-earned money representing the sum total of his winter's earnings is entirely dissipated. About 3,000 of these light-hearted fellows were in the employ of the American Fur Company, and in the months of June and July came in from their several trading posts in the Indian country, bounded by the British dominion on the north, the Missouri river on the west, and the white settlements on the east. The Indians from the upper lakes simultaneously brought in their bark canoes filled with wares which they wished to dispose of, and for a few months at least Mackinac could boast of a variegated transient population of 5,000 men or more. . . .

Early in the month of June, 1822, Indians and voyageurs were returning to Mackinac with the results of their winter's catch. The little village had awakened from its long sleep, and the beach was again crowded with tents and wigwams and a seething mass of strange humanity. New arrivals of canoes and bateaux were being heralded, and friends who had been stationed far apart in the wilds of the North were familiarly greeting one another. Some were pitching tents in which to sleep when not otherwise engaged in carousing, newer arrivals were unpacking pelts, watching their appraisal by the officers of the fur company, and eagerly awaiting the figures that were to indicate the results of their winter's work; others, whose fate had already been decided, were engaged in games or watching the fight of two of the brigade bullies for the proverbial "black feather;" others still were crowding into the retail store of the American Fur Company in an effort to buy buckskin coats, moccasins, flannel shirts, and gaudy neck bands. It was in this little throng that a tragedy occurred on June 6th, which was to leave its imprint on the pages of medical history for all time to come. A gun was accidentally discharged, and a young voyageur dropped to the floor, with a cavity in the left upper abdomen that would have admitted a man's fist. He proved to be a young French Canadian about 19 years of age, who had recently come down from Montreal, doubtless with one of the expeditions of Mr. Matthews.

In the words of Dr. Beaumont:

The whole charge, consisting of powder and duck shot, was received in the left side at not more than two to three feet distance from the muzzle of the piece, in a posterior direction, obliquely forward and outwards, carrying away by its force the integuments more than the size of the palm of a man's hand, blowing off and fracturing the sixth rib from about the middle anteriorly, fracturing the fifth, rupturing the lower portion of the left lobe of the lungs, and lacerating the stomach by a spicula of the rib that was blown through it [s] coat, lodging the charge, wadding, fire in among the fractured ribs and lacerated muscles and integuments, and burning the clothing and flesh to a crisp. I was called to him immediately after the accident. Found a portion of the lungs as large as a turkey's egg protruding through the external wound, lacerated and burnt, and below this another protrusion resem-

bling a portion of the stomach, what at first view I could not believe possible to be that organ in that situation with the subject surviving, but on closer examination I found it to be actually the stomach, with a puncture in the protruding portion large enough to receive my forefinger, and through which a portion of his food that he had taken for breakfast had come out and lodged among his apparel. In this dilemma I considered any attempt to save his life entirely useless.

Dr. Beaumont followed his customary practice of exhaustive and pains-taking clinical notes. During the convalescence of his patient he "nursed him, fed him, clothed him, lodged him and furnished him with every comfort, and dressed his wound daily and for the most part twice a day." Thus began the long history of the pensioning of St. Martin, who at times permitted the investigations soon to be suggested by the accessibility of the interior of the stomach, and at other times baffling and deceiving his patron. In 1825 Dr. Beaumont wrote the following note on the condition of the stomach:

He will drink a quart of water or eat a dish of soup, and then, by removing the dressings and compress, can immediately throw it out through the wound. On removing the dressings I frequently find the stomach inverted to the size and about the shape of a half blown rose, yet he complains of no pain, and it will return itself, or is easily reduced by gentle pressure.

When he lies on the opposite side I can look directly into the cavity of the stomach, and almost see the process of digestion. I can pour in water with a funnel, or put in food with a spoon, and draw them out again with a syphon. I have frequently suspended flesh, raw and wasted, and other substances into the perforation to ascertain the length of time required to digest each; and at one time used a tent of raw beef, instead of lint, to stop the orifice, and found that in less than five hours it was completely digested off, as smooth and even as if it had been cut with a knife.

The experiments then undertaken were encouraged by Surgeon-General Lovell, Robley Dunglison, Benjamin Silliman and others. Dr. Beaumont was granted leave of absence, on one or two occasions, from his frontier post, to confer with colleagues in Washington, New York and Boston, and to utilize the greater conveniences of the laboratory, but his important observations were carried on during his active service and appear all the more remarkable as so important results were attained under so great difficulties.

Dr. Beaumont resigned from the army in 1839, and took up a residence in St. Louis, where he remained, a highly esteemed

practitioner and citizen until his death, which occurred in April 25, 1853. He was in his sixty-eighth year. St. Martin continued profligate and dissolute and in abject poverty. In his later years he exhibited himself in different medical schools. In 1870 he was living with his family in Cavendish, Vt., earning his livelihood by "chopping wood by the cord." In 1879 he wrote to Dr. Beaumont's son:

I am beginning to get old, and I have been ill for six years, and I will not hide from you that I am very poor. In losing your father I lost much, for every year, he gave me somemoney, and that helped me a great deal in my poverty. Therefore I call myself to your attention, and ask you to be so kind as to continue the favors of your father, whom I regret very much. I am suffering a little from my gastric fistula, and my digestion grows worse than ever, so that in granting me yur charity, in ord'r to carry on the traditions of your father, you will not thereby be inconvenienced for long, as I am old and sick.

He survived his patron twenty-seven years, and was eighty-three years of age when he died. *Lux tenebris.*

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, DECEMBER, 1912.

Deaths.

Consumption.	12
Typhoid fever.	2
Scarlet fever.	0
Measles.	1
Whooping-cough.	0
Diphtheria and croup.	1
Grippe.	3
Diarrheal diseases.	4
Pneumonia.	21
Broncho-pneumonia.	6
Bright's disease.	27
Apoplexy.	3
Cancer.	13
Accidents and violence.	1
Deaths over 70 years.	53
Deaths under 1 year.	23
 Total deaths.	 188
Death rate.	22.12
Death rate less non-residents.	18.83

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital.	II	II
Albany Orphan Asylum.	0	0
Child's Hospital.	0	0
County House.	0	3
Homeopathic Hospital.	6	2
Hospital for Incurables.	2	0
House of Good Shepherd.	0	0
House of Shelter.	0	0
Little Sisters of the Poor.	5	0
Public places.	1	2
St. Margaret's House.	2	4
St. Peter's Hospital.	10	2
Austin Maternity Hospital.	1	0
Albany Hospital, Tuberculosis Pavilion.	0	2
Labor Pavilion.	0	0
Lady of Angels Convent.	1	0
Totals.	39	26
Births.	144	
Still births.	9	
Premature births.	3	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were two-hundred thirty-six inspections made of which fifty-eight were of old houses and one hundred seventy-eight of new houses. There were fifty-six iron drains laid, forty-three connections to street sewers, forty-three tile drains, 1 cellar drain, fifty-three cesspools, sixty-two wash basins, sixty-eight sinks, sixty-one bath tubs, sixty wash trays, three trap hoppers, ninety tank closets. There were one hundred twenty-four permits issued of which one hundred four were for plumbing and twenty for building purposes. Forty-one plans were submitted of which six were of old buildings and thirty-five of new buildings. Sixty-four houses were tested, sixteen with blue or red, four with peppermint and forty-four water tests. Twenty-nine houses were examined on complaint and sixty were re-examined. Fourteen complaints were found to be valid and fifteen without cause.

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

Typhoid fever.	3
Scarlet fever.	3
Diphtheria and croup.	31
Chickenpox.	20

Measles	161
Smallpox	0
Whooping-cough	0
Consumption	31
Total	249

Contagious Disease in Relation to Public Schools. Reported
D. S. F.

Public School No. 2	1	..
Public School No. 7 . . . . .	..	1
Public School No. 8	1	..
Public School No. 12	1	..
Public School No. 14	1	..
Public School No. 17	2	..
Public School No. 20	1	2
Public School No. 21	2	..
Public School No. 22 . . . . .	..	1
Lady Help of Christians	2	..
Lady of Angels	3	..
St. Ann's School	1	..
Cathedral School	1	..

Number of days quarantine for diphtheria:

Longest..... 21 Shortest..... 4 Average..... 11 4/21

Number of days quarantine for scarlet fever:

Longest..... 15 Shortest..... 15 Average..... 15

Fumigations:

Houses	46	Rooms	145
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Cases of diphtheria reported	31
Cases of diphtheria in which antitoxin was used	30
Cases in which antitoxin was not used	1
Deaths after use of antitoxin	1

BENDER LABORATORY REPORT ON TUBERCULOSIS.

Positive	9
Negative	26
Total	35

TUBERCULOSIS.

Living cases on record December 1, 1912	307
Cases reported during December:	
By card	19
Dead cases by certificate	5
Total	33$\frac{1}{2}$

Dead cases previously reported.....	7
Dead cases not previously reported.....	5
Duplicates.	1
Removed.	7
	— 20
Living cases on record January 1, 1913.....	311
Total tuberculosis death certificates filed during December.....	12
Out of town cases dying in Albany:	
Albany Hospital Camp.....	2
County Hospital.	1
	— 3
Net city tuberculosis deaths.....	9

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of new cases assigned.....	8
Cases remaining under supervision.....	29
Total.	37

Disposition of old and new cases:

Died.	6
Referred to Hospital.....	2
Left city.	1
Remaining under general Albany Guild Nurse.....	28
Number of visits made.....	98

BUREAU OF PATHOLOGY.*Bender Laboratory Report on Diphtheria.*

Initial positive.	29
Initial negative.	202
Release positive.	23
Release negative.	42
Failed.	17
Total.	313

Test of Sputum for Tuberculosis.

Initial positive.	14
Initial negative.	27
Failed.	1
Total.	42

BUREAU OF MARKETS.

Market inspections.....	175
Public market inspections.....	21
Fish market inspections.....	2
Hide house inspections.....	7
Packing house inspections.....	2
Slaughter house inspections.....	5
Rendering plant inspections.....	3

MISCELLANEOUS.

Mercantile certificates issued to children.....	34
Factory certificates issued to children.....	2
Children's birth records on file.....	36
Number of written complaints of nuisances.....	43
Privy vaults.....	5
Closets.....	3
Plumbing.....	11
Other miscellaneous complaints.....	24
Cases assigned to health physicians.....	68
Calls made.....	121

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSES.—STATISTICS FOR DECEMBER, 1912.—Number of new cases, 354; classified as follows: Dispensary patients receiving home care, 5; district cases reported by health physicians, 4; charity cases reported by other physicians, 248; moderate income patients, 73; metropolitan patients, 24; old cases still under treatment, 96; total number of cases under nursing care during month, 450. Classification of diseases for the new cases: Medical, 52; surgical, 11; obstetrical under professional care, mothers 39, infants 40; skin, 3; infectious diseases in the medical list, 209. Disposition: Removed to hospitals, 27; deaths, 51; discharged cured, 107; improved, 18; unimproved, 50; number of patients still remaining under care, 197.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 1; students in attendance, 4; nurses in attendance, 4; patients carried over from last month, 2; new patients during month, 4; patients discharged, 4; visits by head obstetrician, 2; visits by students, 31; visits by nurses, 42; total number of visits for this department, 75.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,248; for professional supervision of convalescents, 533; total number of visits, 1,781; cases reported to the Guild by three health physicians and fifty-eight other physicians; graduate nurses 9, and pupil nurses 7 on duty.

Dispensary Report.—Number of clinics held, 79; new patients, 79; old patients, 305; total number of patients treated during month, 384. Classification of clinics held: Surgical, 10; nose and throat, 7; eye and ear, 16; skin and genito-urinary, 8; medical, 10; lung, 11; dental, 1; nervous, 0; stomach, 0; children, 9; gynecological, 7.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—A special meeting of the Medical Society of the County of Albany was held at the Albany Medical College, Monday, December 30, 1912, at 8.30 p. m. The question of Medical Inspection of Public Schools was discussed and the committee appointed by the President to investigate the subject reported. The report advising one chief medical inspector and assistant medical inspectors was adopted.

The regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College, Tuesday, January 21, 1913, at 8.30 p. m. The following program was presented: "The Middle Turbinate and the Eye," Dr. E. E. Hinman; Discussion, Dr. A. J. Bedell; "Why Patients Die After Operations," Dr. A. H. Traver; Discussion, Dr. J. H. Gutmann; "Should Newspapers have a Medical Editor?" Dr. E. A. Vander Veer.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The regular meeting of the Medical Society of the County of Schenectady was held in the room of the Society at the New County Court House, Tuesday, January 14, 1913, at 8.30 p. m. The following papers were read: "The Institutional Care of Children," Dr. Henry L. K. Shaw, Albany, N. Y.; "Care of the Teeth," Dr. A. M. Wright, Troy, N. Y.

After the meeting the members of the Society were the guests of the Medical Staff of the Children's Dispensary for Inspection at their new building, at 25 Lafayette Street.

NEW YORK STATE DEPARTMENT OF HEALTH.—A Public Health Mass Meeting under the auspices of the New York State Department of Health, the City Department of Health, the Federation of Women's Clubs and the Public Health Committee of the American Medical Association, with Dr. Joseph D. Craig presiding, was held at the City Hall, Albany, Wednesday, January 15, at 8 p. m.

SUFFOLK COUNTY PURCHASES SITE FOR TUBERCULOSIS HOSPITAL.—The Suffolk County Board of Supervisors voted to purchase as a site for the proposed county tuberculosis hospital, a property consisting of 43 acres, 7 miles north of Patchogue. The building is well protected on the north and west by a high hill and commands a splendid panoramic view of the country to the south and the Atlantic Ocean. The cost was \$4,000.

HOSPITAL NOTES.—A contract has been awarded for the construction of the Montgomery Tuberculosis Hospital, Amsterdam, to cost about \$16,000.

The extensive addition to St. Mary's Hospital, Amsterdam, is nearly completed and is already being equipped.

PLANS FOR LETCHWORTH VILLAGE.—Contracts are soon to be let for the buildings of Letchworth Village, the State institutions for the segregation of epileptics and feeble-minded. The first group of buildings will include four dormitories, an attendants' home, a dining hall, laundry, power plant and storehouse.

NINTH MEETING OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The ninth meeting of the Congress of American Physicians and Surgeons will be held in Washington, D. C., May 6 and 7, 1913. The members of the following associations comprise the Congress: American Laryngological Association, American Surgical Association, American Climatological Association, Association of American Physicians, American Association of Genito-Urinary Surgeons, American Orthopedic Association, American Pediatric Society, American Association of Pathologists and Bacteriologists, American Ophthalmological Society, American Otological Society, American Neurological Association, American Gynecological Association, American Dermatological Association, American Society of Tropical Medicine.

SECOND INTERNATIONAL CONGRESS FOR LIFE SAVING AND PREVENTION OF ACCIDENTS.—The second International Congress for Live Saving and Prevention of Accidents will be held at Vienna, September 9th to 13th inclusive, 1913.

AN HISTORICAL MEDICAL EXHIBITION IN LONDON.—The International Medical Congress will meet in London in the summer of 1913, and in this connection, an exhibition of rare and curious objects relating to Medicine, Chemistry, Pharmacy and the allied sciences is being organized. Among other interesting sections is one including the medical deities of savage, barbaric and other primitive peoples. Amulets, talisman and charms with the art of healing will also form another prominent feature. In the section of surgery an endeavor will be made to trace the evolution and development of the chief instruments in use at the present day. In pharmacy and botany special exhibits are projected which will include models of ancient pharmacies, laboratories and curious relics of the practice of alchemy in early times. Specimens of ancient and unusual *materia medica* from all parts of the world will be exhibited.

ADVISES VACCINATION OF RAILROAD EMPLOYEES.—State Health Commissioner Eugene H. Porter urges the vaccination of all railroad employees in order to prevent them from spreading smallpox. This movement has been inaugurated because of the prevalence of smallpox in certain parts of the State and because a recent epidemic in Cadodia is believed by the health authorities to have been spread by the railroads.

The department of health has been notified by the New York, Ontario and Western Railroad that it has instructed its employees to be vaccinated.

CIVIL SERVICE EXAMINATIONS.—On February 5, 1913, an examination will be held for the purpose of filling vacancies in the Indian Service at the following places: Navajo Agency, \$1,000 per annum; Cheyenne River Agency, S. D., \$1,000; Santee Agency, Neb., \$1,000; Western Navajo Agency, Arizona, \$1,200. Only men physicians or members of graduating classes in recognized medical schools will be admitted to the examination. Full particulars as to the examination may be obtained from the United States Civil Service Commission, Washington, D. C.

SARATOGA HOSPITAL.—A private inspection of the New Hospital Building, Saratoga, took place Friday, December 27, 1912, between the hours of two and six p. m.

SOCIETY TO AID CRIPPLES.—Some of the residents of Westchester County and New York have organized the Cripples Welfare Society of New York and Westchester and the incorporation of the Society has been approved. The object of this organization is to aid cripples and to reduce mendicancy, vagrancy and pauperism. The society proposes to provide artificial limbs, to procure employment for cripples and also to elevate their moral condition.

MEDICAL EXAMINATION OF APPLICANTS FOR MARRIAGE LICENSE.—There is a bill before the legislature providing for a medical examination of both parties to a marriage contract before the issuance of a license, making it a misdemeanor for the contracting parties to procure a license by fraud, for a doctor to issue a false certificate and for a minister to solemnize a marriage, knowing that the provisions of the bill have not been complied with. The bill has the endorsement of the New York County Medical Society.

HERKIMER COUNTY TUBERCULOSIS HOSPITAL.—The Herkimer County Board of Supervisors have decided to establish a county hospital for the care and treatment of persons suffering from tuberculosis.

PERSONALS.—Dr. FRED M. BARNEY (A. M. C. '88), is now at Dolgeville, N. Y.

Dr. and Mrs. T. FREDERIC DOESCHER (A. M. C. '06), have sailed for Bermuda and later will tour Southern Europe.

—Dr. J. EDMUND WHITE (A. M. C. '10), has moved from 311 Delaware Avenue, Albany, to Malone, N. Y., where he will be identified with the Malone Memorial Hospital.

MARRIAGE.—Dr. RICHARD A. LAWRENCE (A. M. C. '07), and Miss Helen P. A'Hearn, both of Albany, on January 15, 1913.

DIED.—Dr. WILLIAM E. JOHNSON (A. M. C. '59), a member of the Medical Society of the State of New York, assistant surgeon and later surgeon of the One Hundred and Ninth New York Volunteer Infantry and later brigade surgeon during the Civil War and State senator for two years, died at his home in Waverly, December 16, aged 75.

—Dr. GRENVILLE A. EMORY (A. M. C. '67), a well known physician of Orange County, New York, died at his home in Middletown, N. Y., December 12, 1912, from locomotor ataxia.

In Memoriam

WILLIAM ELTING JOHNSON, M. D.

Dr. WILLIAM ELTING JOHNSON died at his home in Waverly, N. Y., Monday, December 16, 1912 of pneumonia. The high esteem in which Dr. Johnson was held is reflected by the following appreciative sketch of his life from *The Waverly Free Press*:

William Elting Johnson, who was the son of Alexander and Jane Cuddeback Johnson, was born at Weston, Orange county, N. Y., Oct. 17, 1837, and was descended from sturdy Colonial and Revolutionary stock, many of his ancestors coming to this country on account of religious persecutions, while ten of them served in the Revolutionary War.

Dr. Johnson's early life was passed at Port Jervis, N. Y., where he attended the public school and Neversink Academy and later studied medicine with Dr. Solomon VanEtten. He attended lectures at the Albany Medical College, and receiving his degree in 1860, located at Waverly that year, where he has since resided.

When the Civil War broke out he went to Albany, where he took a surgeon's examination for the middle division under General Wood, and was appointed examining surgeon for the 26th senatorial district, with headquarters at Binghamton. After the examination of recruits was completed, he was assigned for duty with the 109th New York, Col. B. F. Tracy commanding, and was soon promoted to surgeon with rank of major. The regiment was at first assigned to duty on the Baltimore and Ohio railroad, but in the fall of 1863 was sent to Mason's Island, D. C., with headquarters in the house of Mason, of Mason and Slidell notoriety. The island was a rendezvous for drafted men from several States, and Secretary Stanton directed that a conscript hospital be erected there to which Dr. Johnson was assigned as surgeon-in-chief, which position he held until General Grant took command of the armies and ordered the troops occupying the defense of Washington to the front. Dr. Johnson was then assigned to the 3rd brigade, 3rd division, 9th army corps, and was in its first engagement, the Battle of the Wilderness. He was subsequently assigned to the operating staff of the

3rd division, 9th army corps, and later became the executive officer of the 9th army corps at City Point, Va. He took part in the battles at Spottsylvania, North Anna, Cold Harbor, Petersburg, Weldon Railroad and several minor engagements, receiving his final honorable discharge June 20, 1865, at Washington. Dr. Johnson's interest in the Civil War never ceased and he took much delight in reading the many books of which it is the subject. He was a member of Walter Hull Post, G. A. R., and also of the Legion of Honor, an organization composed of officers of the war.

Dr. Johnson ranked high in the medical profession, both as physician and surgeon, and was well known in the valley, where he was often called for counsel, as well as in the surrounding towns. He was president of the U. S. Pension Board for four years; surgeon-in-chief of the Robert Packer Hospital for two; President County Medical Society; Secretary State Board of Health, and surgeon for both the Erie and Lehigh railroads.

The doctor's public positions have been numerous and noteworthy. He served three years as village president and in spite of his many professional duties, has always been actively interested in the business enterprise of the village. He was a director of the Waverly Paper Mills, helped to organize the old Opera House company and was a stockholder of the present company; was a stockholder in the company which built the Tioga Hotel; vice-president of the Citizens' Bank; helped organize the Waverly Water company and was for years its vice-president, and has been president of the Building and Loan Association.

In State and national affairs the doctor has also held various positions. He was a presidential elector in 1888 and represented the 38th senatorial district at Albany from 1895 to 1900, being chairman of the committee on military affairs during the Cuban war; member of the committees on taxation and retrenchment, and insurance, and chairman of the committee on public health.

While finding time to devote to the many enterprises in which he was engaged, Dr. Johnson always took an active part in church affairs. He has been a member and regular attendant of the First Presbyterian church since he came to Waverly, and has for year been president of the board of trustees. He was also a generous giver to all branches of church work.

Whether village, State or nation called him, Dr. Johnson always performed his duty with the same conscientiousness and thoroughness, and Waverly mourns him as one who has taken a foremost place in its upbuilding.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

An Introduction to Experimental Psychology. By CHARLES S. MYERS, M. D., Sc. D., Lecturer in Experimental Psychology in the University of Cambridge. Cambridge, at the University Press, 1911.

This is one of the series of Cambridge manuals of science and literature, published by the University Press, and consisting of small and concise volumes for general rather than technical use. The price in England is one shilling and in America the books are distributed by Putnams at forty cents each. All of them are valuable and suggestive. The volume on Experimental Psychology by Dr. Myers explains the elements of modern scientific investigation in physiological psychology, the outlines and methods of examination of the special senses and of the memory, and also describes the simpler mental tests. This leads to the methods of determining the relative mental activity of individuals, and the illustrations refer particularly to inquiries into the abilities and individualities of children. Suggestions are also made for the use of these tests in mental defectives, but this branch of the work is so complicated that it can hardly be said to have been covered in this introduction to psychology. The book, however, is valuable to any one who wishes to obtain an idea of the methods underlying psychical research.

Diseases of the Stomach, Intestines and Pancreas. By ROBERT COLEMAN KEMP, M. D., Professor of Gastro-intestinal Diseases, New York School of Clinical Medicine. Second edition, revised and enlarged. Octavo of 1,021 pages, with 388 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$6.50 net; half morocco, \$8 net.

This edition is an improvement on an already recognized text-book. The illustrations are more numerous and the subject matter more extensive. The author states that the section on duodenal ulcer has been rewritten and the new chapters on Colon Bacillus Infection and on Diseases of the Pancreas are worthy of mention. The volume is divided into four parts; is systematically arranged and thoroughly indexed. Part I is devoted to The Anatomy of the Stomach and Intestines, Physiology of Digestion, Interrogation of the Patient and General Methods of Physical Examination and is divided into the four chapters, respectively. The most noteworthy chapter in this section is the one devoted to the "Interrogation of the Patient." It is quite complete, and emphasizes the importance of a thorough history and physical examination of the patient. Under "Contents" the subjects as presented in Chapter IV are somewhat misleading. No mention is here made of the somewhat lengthy discussion on diseases of the esophagus which occupies such a large portion of the chapter. The instrumental examination for

the detection of esophageal disease is thorough and includes the most recent methods.

Part II discusses "Diseases of the Stomach" and is divided into fifteen chapters. Chapter V is extremely interesting and gives in most lucid style the methods of physical examination of the stomach. The author states his deductions as regards the efficacy of the various methods and brings to the reader's mind the practical viewpoint.

One cannot find a more explicit discussion of the methods of gastric aspiration, examination both microscopically and chemically of the gastric contents and the deduction therefrom than are found in this book. The chapter is well written, and concise and is explanatory in itself. Diet is discussed in detail, the author laying special stress on the benefits derived from the low protein diet as advocated by Russell Chittenden. Diet in disease is well taken up.

The greater portion of the eighth chapter is devoted to the methods technic, indications and contraindications to gastric lavage. Hard and cold facts are given which must appeal to the practical man. Theory is to a certain extent, laid aside and solid reasoning is employed. Thus the author in discussing the use of the stomach pump in cases of poisoning from corrosive substances says "In cases of poisoning lavage would take precedence over all other risks." The remainder of this section is devoted to the symptoms, treatment and etiology of the diseases of the stomach and apparently well covers the subject. Glandard's disease is especially well discussed.

Part III includes all that is essential in the study of intestinal diseases and takes up in detail the mechanical and chemical and microscopic procedures which may aid in diagnosis. A discussion of the etiology, symptoms and treatment of the intestinal diseases shows very little which may be improved upon. The chapter devoted to the infections by the B. Coli. though instructive may be somewhat criticized for its brevity, in reference to the kidney infections.

Diseases of the Pancreas are well gone over in Part IV.

The book, is, in the reviewer's opinion, one of the best on the subject. The frequent references to up-to-date literature makes it a most recent contribution to the text-books devoted to the same subjects. The print is good; the illustrations are explanatory and the text itself rings with truth and extreme practicability. It should be in a specialist's as well as a general practitioner's library.

J. L. D.

Sexual Impotence. By VICTOR G. VECKI, M. D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. Fourth edition, enlarged. 12mo. of 394 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$2.25 net.

The writer has undoubtedly taken up the subject from all viewpoints and shows originality in the work which is in itself apparently thorough. Some parts of the book are "worth the while" but from a practical and sociologic point of view the work is not in the writer's opinion,

one which should be promiscuously sold. If the author had omitted many of his statements, which appeal more to the "reader of trash" than to the physician, the book would perhaps be of more value to the profession. In the reviewer's opinion the book should not be distributed too freely. It is the kind of text which in many respects resembles the type of book too frequently found in the school boy's desk, well concealed from the eyes of his teacher.

J. L. D.

The Blood of the Fathers—A Play in Four Acts. By G. FRANK LYDSTON. The Riverton Press, Chicago MCMXII.

The story deals with the heredity and crime problem. The author, who is himself a physician, forms into an interesting plot his versions of some of the modern social problems. The plot hinges upon the actions of a young physician who, though realizing the dangers of a vicious environment and heredity, allows himself to mate with a woman whom he knows, before his marriage, to be the offspring of criminal parents. The young physician, notwithstanding his knowledge of neurology and criminal anthropology, is decoyed, as it were, by the beauty and attractiveness of a young southern woman, and remains blind, up to a certain point, to the criminal characteristics of his wife. He finally realizes, upon her killing herself to evade the courts of justice, that he was not true to himself and decides that his future happiness must be dependent upon the dictates of his conscience and reasoning powers.

The book is odd—but it is interesting and presents to the reader, the idea of a modern "Morality play." It is true to the intricacies of modern every day life and is well worth the reading.

J. L. D.

Infant Feeding. By CLIFFORD G. GRULEE, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3 net.

The work is based upon a course of lectures delivered to medical students and is an exposition of the Continental method of infant feeding, features peculiar to which are the use of dilutions of whole milk and the employment of the longer interval (four hours) between feedings.

Part I is devoted to Fundamental Principles of Infants' Nutrition, an understanding of which is essential if the practitioner is to be able not only to recognize early evidences of departure from the normal in the child at hand but also to apply the proper treatment to what may be a slight but significant gastro-intestinal disturbance.

Part II deals with the breast-fed baby.

To Part III Artificial Feeding, over one-half of the work is devoted. That artificial feeding of the infant is far from an exact science is apparent from the author's assertion that "it is impossible to lay down

exact formulae which will suffice in even the majority of normal infants." If intelligent artificial feeding of the normal infant depends upon an appreciation of such principles as are laid down in Part I, it is apparent that success in feeding the child who already presents disorders of nutrition depends absolutely upon an appreciation of pathological conditions that obtain. The pathological aspect of nutritional disturbances is discussed at length. An interesting feature is a chapter devoted to symptoms, their causes—and treatment.

Part IV is devoted to Nutrition in other Conditions, *e. g.*, prematurity, rickets and scurvy.

The work is not exhaustive. The theoretical yields to the practical when the former would confuse. The work is designed for general practitioner and student to whom it will prove of immeasurable value.

Practical Anatomy. An Exposition of the Facts of Gross Anatomy from the Topographical Standpoint and a Guide to the Dissection of the Human Body. By JOHN C. HEISLER, M. D., Professor of Anatomy in the Medico-Chirurgical College of Philadelphia. 790 pages, 366 illustration, price \$4.50. J. B. Lippincott Company, Philadelphia and London, 1912.

In dissection, the student is concerned with the study of regional anatomy essentially. To serve as a complete guide in that direction, the work is designed. Therefore it is meant to supplement rather than to replace the extended treatise on descriptive anatomy. From the surface anatomy of the part, the various regions are described in the order in which they are exposed in dissection. The illustrations, which are abundant and for the greater part original, are arranged when possible in the order in which the fields represented appear. Points of clinical interest in connection with structures described are scattered in paragraphs throughout the work.

Substantial binding, flexible covers, convenient size, good paper and clear type add to an already worthy work.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Vol. 1, Nos. 4 and 5. August, 1912 and October, 1912. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

The August and October numbers of these surgical clinics maintain the general standard of excellence attained by the earlier numbers. About thirty-five different surgical topics are presented in the two numbers, each discussion being based as usual upon the presentation of some typical case. The reception accorded the earlier numbers of the "Clinics" will, we believe, not only be continued but increased and they will become a contribution to current surgical literature of ever-increasing value

A. W. E.

OBSTETRICS

Edited by James P. Boyd, M. D.

Childbirth in Elderly Primiparae.

KATE C. SPAIN. *American Journal of Obstetrics.* Vol. LXV., No. 411, March, 1912.

With early marriage made increasingly more difficult because of prevailing economic conditions, the number of elderly parturients may be expected progressively to increase. It is important to emphasize what, if any, added risks she who is pregnant for the first time at or beyond thirty years is to encounter.

Authorities consulted differ markedly upon many points. It is generally agreed however that the frequency of twin pregnancy is greater in elderly than in young primiparae. Prinzig found that twins occurred in 2.9% of confinements in primiparae below twenty years and in 4.1% at thirty years and older.

Such complications as abortion, albuminuria and eclampsia are probably no more frequent than in the younger. Two factors are conspicuous in causing the prolonged labors generally characteristic of elderly primiparae: the inherent weakness of older, and unused, muscle fibre and the frequency of vicious presentation. The so-called 'rigid cervix' is practically never the essential cause of obstruction; almost invariably it fails to dilate because of the weakness of the contractions of the uterine muscle.

Nor is labor prolonged because of over-size on the part of the child, with the weight and length of which pregnancy at later ages has been shown to make practically no difference.

As might be expected, operative interference is required in a relatively large number of cases. By Edgar it is claimed that 36% of the cases require forceps. The indications arose in 27% of Tarnier's cases. The obstetric morbidity from laceration, hemorrhage and shock is increased accordingly.

An interesting observation by Fetzer is added: the later the first pregnancy occurs, the greater the liability to prolapse of the uterus. The number of subsequent labors has no apparent bearing upon the subject.

Induction of premature labor in elderly primiparae is advocated by the author to avoid the complications that might arise from uterine inertia, disproportion between the size of the child and that of the canal, and faulty presentation.

P. T. E.

Blood Pressure in Pregnancy.

C. HOLLISTER JUDD. *American Journal of Obstetrics.* Vol. LXV., No. 411, March, 1912.

When blood pressure determinations are to be made in a large number of cases, the wisdom of using a single standard instrument in the same manner in every case is apparent. If the individual case is to be followed

intelligently through pregnancy, labor and the puerperium, it is essential that what might be termed the normal blood pressure be determined as early in pregnancy as is possible and that subsequent observations be made and recorded regularly.

The author's observations lead him to believe that there is no progressive increase in blood pressure during the latter months of pregnancy. Moderate and variable rises in blood pressure are considered as conservative efforts on the part of nature to render more satisfactory the work of the temporarily inefficient kidney or the passively congested liver; and are made possible by automatic action of the vasomotor centers of the bulb.

Nucleo-albumin, then sero-albumin and sero-globulin appear in the urine in quite constant ratio to increase in blood pressure; though small quantities of the former may appear without such increase.

The author attaches no particular importance to the frequent normal undulations in blood pressure ascribable essentially to the unstable condition of the nervous system during pregnancy.

During labor the blood pressure rises rapidly one or two minutes after the onset of the pain, its height and duration of rise depending upon the intensity of uterine contraction. If pains follow one another rapidly, the pressure is shown by chart not to fall completely between them. Cases may be presumed in which active treatment of such increase in pressure would be indicated. An albumin appearing in the urine during labor and soon disappearing might be termed one of 'pressure.'

The author is of the opinion that the marked rise in pressure during labor is caused neither by general muscular contraction nor by that of the uterine vessels but is the direct result of the vaso-constrictor action of the splanchnic nerves with the ramifications of which the contracting uterus is intimately associated.

Following birth of the child, a rapid fall to sub-normal, reaching its lowest in twelve or more hours, persisting with variations that depend upon body-action and returning to the normal in about two weeks, is the rule.

Patients possessing compensated cardiac lesions or enlarged thyroids present certain irregularities but no marked differences in blood pressure.

Eclampsia was found to present uniformly high blood pressures that increased during or just after a convulsion, the amount of rise usually being in direct proportion to the amount of sero-albumin and sero-globulin, rather than to the quantity of urine, excreted. Since many cases of eclampsia show no albumin (20% Hirst) and since blood pressure rises in response to other toxins than those concerned in the loss of the blood albumins, it is apparent that accurate determinations of blood pressure (especially when combined with urinalyses) offer valuable means of anticipating the onset of the eclamptic state.

P. T. H.

LARYNGOLOGY, RHINOLOGY AND OTOTOLOGY

Edited by Clement F. Theisen, M. D.

Complicated Cases of Diseases of the Accessory Sinuses. (Complicirte Fälle von Nasennebenhöhlenerkrankung.)

W. UFFENORDE. *Zeitschrift fur Laryngologie, Bd. III, S. 597, 1911.*

The author reports twelve cases of acute retro-bulbar optic neuritis, that all originated in conjunction with an acute inflammation of the accessory sinuses. Even if examination of the nose in such cases does not show anything very abnormal, the author believes that, particularly if the history of the case shows a previous rhinitis, a closer connection between the affection of the eye and nose must be thought of. The author bases his report on thirty-seven cases of affections of the accessory sinuses, coming under his observation in the Göttingen Clinic.

The disturbances of vision in his cases, the author believes, were caused by a stasis of vessels and a perineural oedema of the optic nerve. The nasal treatment consisted in reduction of the middle turbinate, and the use of a powder of boric acid, menthol and cocaine, which was snuffed up the nose.

The author reports cases of orbital phlegmons resulting from an acute or chronic suppuration in the frontal sinus or ethmoid cells.

Disease of the ethmoid cells causes more orbital complications than disease of the frontal sinus. The report of the case of a woman, age thirty-nine years, is given, in whom gradually a total paralysis of the right eye muscles developed without exophthalmos. During the operation, necrotic masses were found in the posterior ethmoid cells and sphenoid sinus. Iodide of potash was given but without result. After the operation the paralysis of the eye muscles gradually disappeared.

In three cases of suppuration in the antrum of Highmore with orbital complications, the author mentions the value of the Caldwell-Luc operation. Three cases of chronic suppuration of the ethmoid and frontal sinuses with cerebral complications, are also given. In one case, a diagnosis of acute suppuration of the frontal sinus was made. The operation showed an absence of the frontal sinus, and the dura was immediately exposed. An extra-dural abscess resulted, which got well. This experience shows how important it is to have a radiograph made before the operation.

In another case, in a man twenty-three years old, an osteo-myelitis of the frontal bone in connection with a chronic suppuration of the frontal sinus and ethmoid cells, led to a meningitis and septicaemia. The Kuhnt radical operation was performed in this case, but the patient did not recover.

In the last case, a girl, nineteen years old, there was present an ozena with a left-sided empyema of the frontal sinus and ethmoid cells. During the Killian operation, an abscess of the frontal sinus with an extra-dural abscess, was discovered. After two months of apparently complete cure, cerebral symptoms again developed, and an abscess of the frontal lobe at a depth of 5 cm. was found. The patient died of meningitis caused by breaking through of the abscess into the ventricle.

*The Treatment of the Phlegmonous Inflammations of Waldeyer's Ring.
(Ueber Therapie der Phlegmonösen Entzündungen des Waldeyerschen
Ringes.)*

E. WINCKLER. *Deutsche Medizinische Wochenschrift*, No. 46, 1911.

The phlegmonous inflammatory processes of the lymphatic ring of the pharynx, are always present by acute infections of the whole or of the larger part of the ring. The abscess develops later in some part of the adenoid substance. Bacteriological examinations of the pus showed mainly streptococci, more rarely staphylococci. Retro-pharyngeal abscesses frequently developed after scarlatinal anginas.

In one case of deep abscess of the lingual tonsil, the infection probably resulted from a carious molar of the right lower jaw, while in two other cases there had probably been an injury of the lingual tonsil. Both these patients stated that they had been chewing a blade of grass, which they had pulled out. In the majority of the cases, however, the etiology was very obscure.

The following forms must be distinguished: First, abscess of the faucial tonsil, peritonsillitis; second, abscess of the posterior wall of the pharynx, the retro-pharyngeal abscess; third, abscess of the lingual tonsil or abscess of the base of the tongue.

Bilateral abscess of the tonsils and peritonsillar abscess are relatively rare. The combination of retro-pharyngeal abscess and peritonsillar abscess is also uncommon. The author has only seen one case. Anatomically, there is a great difference in the tonsils in which repeated peritonsillar abscesses had occurred and in the chronically diseased tonsils, which were removed for other causes. In the simple chronically diseased tonsils, the capsule covers the tonsil uniformly, while in the tonsils in which suppurative processes had occurred, the capsule is broken through at different points by tonsil tissue.

The idea that peritonsillar abscesses originate only in the upper part of the tonsil is not correct. The pus is found almost as frequently laterally and low down, in fact, the whole tonsil may be surrounded by an abscess. Patients who have had one attack of peritonsillar abscess are very susceptible to further attacks. This fact and the difficulty to keep up good drainage after incising the abscess, is an argument for the removal of the tonsil during the attack. It is much easier to remove the tonsil during the height of the attack and this is particularly true of the small submerged tonsils, whose removal under normal conditions is often a very difficult operation.

When the pillars of the palate are infiltrated and oedematous, it is easy to dissect out the tonsil with the capsule and the extra capsular tonsil tissue, which has been loosened by the pus, so that adhesions with muscular tissue can easily be separated. The operation which is done under general anaesthesia, is performed in a short time and affords the patient prompt relief and protection against further attacks. Unless a complete tonsillectomy is performed, however, the operation will not prevent recurrences and is absolutely useless.

In recto-pharyngeal abscesses, the infection of the pharyngeal tonsil plays the most important rôle. Abscesses localized only in the pharyngeal tonsil are rare. More frequently the infection extends to the loose connective tissue between the pharyngeal fascia and the prevertebral fascia of the neck. The danger of such an infection in childhood consists in the extension of the suppurative process along the anterior surface of the vertebrae, to the fifth or sixth cervical vertebrae and posterior surface of the larynx, so causing great difficulty in breathing.

The treatment in such a case consists in a crucial incision through the abscess wall on the posterior wall of the pharynx, just as soon as the condition is recognized, thus preventing a downward extension of the infection. If the pus has extended so deeply that pressure against the larynx is being produced and swelling of one side of the neck, an external operation must be performed. The lateral pharyngeal wall can be reached by an incision along the anterior border of the sternocleidomastoid muscle. If possible a tracheotomy should be avoided because it paves the way for further infection. The difficulty in breathing stops as soon as the abscess is opened.

Suppurative conditions of the lingual tonsil may be merely tonsillar abscesses, which cause swelling at the base of the tongue, or the muscular substance of the tongue itself may be involved. In the latter infection, August Killian has pointed out that an incision between the two genioglossi or between the geniglossus and hyoglossus is the best treatment.

In conclusion, the author states that in phlegmonous inflammations of the lymphatic ring, incisions in the pharyngeal cavity are not sufficient. The radical operation, tonsillectomy, does not only remove the existing disease but prevents recurrences of the same condition.

GYNECOLOGY

Edited by John A. Sampson, M. D.

Primary Carcinoma of the Female Urethra.

BECKWITH WHITEHOUSE. *The Journal of Obstetrics and Gynecology of the British Empire*, December, 1911.

The writer has collected forty-three undoubted cases of this condition from the literature, including one of his own.

The common seat of the growth is the floor of the urethra near the external orifice, i.e., a similar situation to the caruncle, which is in favor of an inflammatory lesion preceding the malignant growth, and also pointing to trauma, fissures and scars produced by labor and otherwise as predisposing factors.

The vulvo-urethral variety occurs more frequently than the urethral, and thirty-two of the forty-three were of this type. He subdivides these into three groups:

1. An irregular papillomatous growth which may be easily mistaken for a caruncle.

2. An ulcer, produced by the breaking down of a nodule in the floor of the vestibule at the urethral orifice.

3. An induration surrounding the urethral orifice leading to depression, puckering and contraction of the orifice, clinically a scirrhus.

The urethral variety is much rarer, and only eleven are included in this list, and he describes two groups:

1. An irregular ulcer involving the mucosa of the urethral canal and only exposed by urethroscopic examination. The ulcer is usually situated on the floor of the canal in the distal segment and extends towards the orifice and rarely involves the bladder. The case described by the author was of this type.

2. A periurethral tumor which tends to occlude the canal and involve the whole length of the urethra. In the later stages ulceration occurs into the vagina, urethra and vestibule.

The symptomatology of urethral carcinoma is what would be expected as difficult, painful and frequent micturition associated with more or less hemorrhage.

In the vulvo-urethral forms bleeding may occur quite apart from micturition.

In the periurethral type the first symptom is usually difficult micturition.

The preponderating type of growth is squamous called epithelioma, and adino-carcinoma is less frequent.

The author advises, when possible, a wide excision of the urethra together with the inguinal glands.

A table of the authentic cases and references to the literature is included in the article.

PATHOLOGY AND BACTERIOLOGY

Edited by Harry S. Bernstein, M. D.

Passage of Bacteria through the Intestinal Wall.

MAZYCK PRAVENEL and B. W. HAMMER. *The Journal of Medical Research*, Vol. 24, page 513, June 1911.

This experimental work was undertaken by the authors particularly to study the passage of the organisms into the blood as well as to give further evidence on anti-peristalsis. The technique was carried out with the utmost care. The bacillus prodigiosus was used as the test organism. It was grown 48 hours on agar slants, then suspended in normal salt solution in which the growth was thoroughly broken up and distributed, the larger masses being allowed to settle out before use. The amount of material used in ten rabbits were from 4½ to 5 centimetres containing the growth of four agar slants. The injections were made with a soft

rubber catheter which was passed two inches into the rectum. The shortest time which elapsed between the injections and the making of the cultures was 1 hour and 20 minutes, and the longest time, 5 hours and 20 minutes. Cultures were made from the stomach, large intestine, small intestine, caecum, blood and rectum. In no case was the bacillus prodigiosus recovered from the stomach, large intestine, small intestine, caecum or blood. In two cases it was recovered from the rectum.

The two conclusions which the authors feel justified in drawing from this work are: (1) that anti-peristalsis will not, as a rule, carry bacteria above the ileo-caecal valve and second, that the passage of bacteria into the blood from the rectum does not occur rapidly nor surely.

The Pathogenesis of Icterus.

By G. H. WHIPPLE and J. H. KING. *The Journal of Experimental Medicine*, Vol. XIII, No. 1, Page 115.

This experimental study deals with the pathogenesis of obstructive jaundice and was undertaken by the authors with the hope of throwing some light on the mechanism of escape of the bile pigments from the bile capillaries and the appearance of the same pigments in the urine. The justification for such a study is apparent, when we review the work done during the past few years and note the widely varying results of different investigators. Many explain the escape of bile from the liver in obstructive jaundice by the activity of the *lymphatic apparatus*, while others uphold the view that this process is essentially an absorption of bile from the liver by the activity of the *hepatic capillaries*. To clear up this question, the authors undertook this series of experiments. They attempted to simulate as closely as possible, the conditions found in acute obstructive jaundice, and then permitted the animals to live for some time and made careful observations upon the lymph and urine. After an interval of days or weeks they examined the animals for the presence of bile pigments in the various body fluids. They believed such experiments, extending over a long period of time, are more valuable than shorter ones in which no aseptic precautions were taken, and in which the animal was sacrificed at the end of a few hours. The method which they employed was briefly this: Under ether anaesthesia the common bile duct was ligated doubly and cut and the thoracic duct was exposed, tied at its junction with the internal jugular vein and into it a glass canula was inserted. The urine and lymph were then examined at stated intervals.

Their experiments seem to indicate clearly that, in obstructive jaundice, the bile which escapes from the liver is absorbed by the hepatic capillaries and carried by the blood to the kidneys. Apparently the presence of a thoracic duct fistulae influenced in no way the development of icterus after total obstruction of the common bile duct. It was proven that bile pigments, sufficient to give a Salkowski test, may or may not appear in

the lymph of the thoracic duct in such experiments, their appearance possibly depending upon the rapidity of bile secretion and the amount of lymph flow. These animals developing a chronic icterus with a thoracic duct fistulae gave an interesting distribution of bile pigments in the body fluids. The lymph and pericardial fluid contained the same amount, which was much less than the content of bile pigment in the blood serum and urine. It seemed clear to the authors that in both acute and chronic obstructive jaundice the lymphatic apparatus takes no essential or active part in the absorption of bile pigments from the liver. At best, the lymphatic system is a secondary factor in the mechanism of jaundice.

Value of the Leucocyte Count in Acute Surgical Diseases.

HERBERT W. HEWITT. *Annals of Surgery*, Vol. LIV, No. 6, December 1911.

Within the last decade leucocyte counting in acute surgical diseases has acquired a new meaning, due largely to the recognition of the value of the differential count. For many years total counts only were made, and these yielded but little information, as their significance was not well understood. An ordinary furuncle might produce a high count, while a severe general peritonitis might reveal a leucopaenia, and these facts could not be satisfactorily explained. Since a more complete blood picture has been utilized in the study of this class of diseases, valuable information as to the diagnosis and prognosis has been made available. The limitations of all laboratory work, however, must be recognized. The laboratory alone cannot, save in exceptional instances, make a diagnosis for the physician. The clinical findings must be correlated with those from the laboratory, and this is especially true of blood work in acute surgical diseases. It is necessary to carefully exclude all other conditions which might cause a departure from the normal.

For the purpose of this paper the author has used as a working basis, an average normal, not only of the total number of white cells but of the polymorphonuclear cells. As the polymorphonuclear cells are principally affected in inflammatory diseases, they alone of the various types are considered in this study. In attempting to establish an average number of leucocytes which should be considered normal, the author found various writers at great variance. The total number ranged from 6000 to 10,000 and the average normal percentage of the polymorphonuclears from sixty to eighty per cent. He therefore has used in this study 10,000 as the maximum normal number for the total count and seventy-five per cent as the highest normal percentage for the polymorphonuclears. The total count he considers as of little value as it is influenced by many factors, notably the following:

A. Physiological leucocytosis: (1) leucocytosis of the new born. (2) leucocytosis of digestion, (3) leucocytosis of pregnancy, (4) leucocytosis after parturition, (5) leucocytosis of violent exercise, (6) leucocytosis of cold baths and massage, (7) terminal leucocytosis.

B. Pathological leucocytosis: (1) post-hemorrhagic, (2) inflammatory, (3) toxic, (4) malignant diseases, (5) due to therapeutic and experimental influences.

Then, too, in severe infections which are poorly resisted, a low total count is frequently observed; while in mild infections well borne, a high total count may be found, so that all these factors considered he places little value on the total count as a diagnostic or prognostic measure. He believes that the differential count on the other hand is of much value since this is, as a rule, uninfluenced by physiological factors, and the changes due to the pathological conditions are more definitely defined. When both total and differential counts are taken and the relation each bears to the other is considered, the assistance rendered in the diagnosis and prognosis of the disease in question possesses a value vastly greater than either of the less complete and unrelated observations.

The following statements the author considers may be followed as safe general rules:

- (1) The total count is an index of the patient's resistance to the infecting organism,
- (2) The relative polymorphonuclear count is an index of the degree of, or the severity of, the infection,
- (3) If we have a relative polymorphonuclear count ranging between 75% and 80%, infection is probable; if between 80% and 85%, infection is usually found; if above 85%, infection is almost invariably encountered, and this regardless of the total number of leucocytes. In fact, some laboratory workers do not make use of the total count at all, but depend for diagnosis entirely upon the differential count.

A few points can usually be decided by reference to both counts, namely:

- (a) bodily resistance, whether high or low; (b) infection, whether severe or mild, (c) infection whether well borne or poorly resisted, (d) infection, whether circumscribed or diffuse (e.g appendiceal abscess).

The author reports 100 cases from his own private records. The cases were all of the acute inflammatory type and were all brought either to operation or autopsy, so that the diagnosis has been either confirmed or disproved. In a number of cases many counts have been made but the count made immediately before the operation has been the one considered in this series.

The author presents a number of tables comprising all sorts of acute pelvic and abdominal suppurative conditions. The total leucocytes vary from practically a normal or 10,000 to over 20,000, while the polymorphonuclears in practically every instance are between 82% and 87%. It seems that these averages are significant. Excluding the counts in stitch abscess and puerperal sepsis, the following points are noted. In acute inflammatory diseases in the pelvis the polymorphonuclear counts are low. When we approach the appendiceal region the count is higher, but when we reach the "attic" of the abdomen our records show very marked increase in both total and polymorphonuclear counts.

The author asks this question: "Can we place the percentage of polymorphonuclear cells at a certain number below which we do not expect to find infection?" He quotes Sondern in this respect as follows: "A relative percentage of polymorphonuclear cells below 70 with an inflammatory leucocytosis of any degree excludes the presence of pus or gangrene at the time the blood examination is made, and usually indicates good bodily resistance toward infection."

In the writer's opinion in acute inflammatory surgical diseases repeated counts at frequent intervals should be made and if the polymorphonuclear percentage rises while the total number remains stationary or falls, immediate operation should be insisted upon.

From this study the author draws the following conclusions:

1. The laboratory findings must be correlated with the clinical to be of any value at all.
2. The total count alone is insufficient.
3. The differential count, *per se*, is of value in diagnosis, but of little value in prognosis.
4. The total and differential counts, when taken together and correlated with the clinical findings, are frequently of great value both in diagnosis and prognosis.
5. No definite percentage of polymorphonuclear cells can be taken to positively indicate infection. If we have a percentage of between 75 and 80 of polymorphonuclear cells, infection is probable; if we have a percentage of between 80 and 85, infection is usually found; if we have a percentage above 85, infection is almost invariably encountered.
6. The negative value of the count is sometimes very useful in diagnosis.
7. The duration of the infection must be taken into consideration.

Counts are more positively diagnostic when taken early in the course of an acute surgical disease. Infection will frequently, when of long duration, overcome the patient's resistance and so vitiate the value of the count.

Chronic Arthritis.

LINDSAY S. MILNE. *From the Russell Sage Institute of Pathology, New York.*

Journal of Pathology and Bacteriology, Volume 16, No. 2, October, 1911.

Chronic arthritis, or as it is variously called, rheumatoid arthritis, arthritis deformans, chronic articular rheumatism, etc., is one of the least understood of all diseases, as it presents so many varied types and as so many etiological factors may apparently produce much the same results. Also, on account of the difficulty of obtaining material or preparing it for microscopical examination, its pathology has been very little studied.

This study by Milne is based largely on the experience of the autopsies of the past two years in the Russell Sage Institute of Pathology and

Bacteriology, New York. The greater part of the material is obtained from the New York City hospital where large numbers of patients suffering from chronic joint conditions are under observation for long periods of time.

Clinically, there are two major types of chronic arthritis; those which lead to ankylosis without deformity, and those where there is deformity without adhesions. Between these, however, as he observes, there are all gradations, and frequently the two forms are combined. There are also cases where for long periods there is only stiffness of the joints, or grating or pain on movement, but it may eventually lead either to ankylosis or deformity. All these different types may be produced by the same etiological factor, the variations largely depending on the duration and intensity of the damaging agent.

The most simple type of arthritis which he recognizes is that observed in old age. Here the joints simply become stiff and often there is a moderate degree of contracture, particularly if the subject has been bedridden for some considerable time. These contractures are largely due to muscular involvement, but they may give rise to the impression that there is advanced chronic arthritis. In young very emaciated subjects, dying from some wasting disease, such as phthisis, this stiffness of the joints and contractures resembling the condition seen in extreme old age, may be very misleading. In nearly all of these cases observed in old age cartilage of the joints participates in the general atrophy of the tissues. These changes occur independently of arterio-sclerosis, or are associated with it only in so far as arterio-sclerosis assists in producing the general body atrophy. In all the joints of senile atrophoid subjects there occurs a simple atrophy of the cartilage, chiefly in the situations normally most exposed to friction, and possibly also where nutrition is poorest.

There is no inflammatory change associated with it, as no synovial or epiphyseal reaction seems to occur. The condition follows on similar processes which cause general tissue atrophy in old age, possibly on defective nutrition. It is thus not a real arthritis, but is perhaps better styled a degenerative arthropathy.

True arthritis is essentially an inflammatory process, and its effects depend on the quality of the damaging agent, its duration, and its method of extension to the joint. The same cause may thus give rise to vastly different forms of arthritis, and the mistake must not be made of classifying similar types in the same etiological group.

There is an immense variety of etiological factors related to the production of arthritis. In the course of certain general infections, joints may become involved, and many toxic processes seem to have a special selection for the joints. This is likewise true of the pyogenic infections, which have the same tendency to cause arthritis spreading from joint to joint with no involvement of the other organs. Various defects of metabolism also seem to be associated with the dissemination of toxic substances which are capable of exciting inflammatory changes in the

joints. Certain of these toxic agents may act like gout, where uratic crystals are deposited in the cartilage, destroy it, and secondarily excite inflammatory reactive changes in the synovial membrane and marrow spaces of the epiphyses, and so produce a true arthritis.

The milder grades of joint infection, such as occur in rheumatic fever, cause an inflammation in the synovial membrane, congestion of the vessels beneath the cartilage, and generally an effusion of serum into the joint. As a rule, this resolves completely, but chronic synovitis and persistent effusion may result and even permanent damage, as in the more severe forms of arthritis.

In the more severe types of infection the entire joint surface may be involved. The common appearance in such cases is for the joint to be distended with fluid, the synovial membrane congested and villous in appearance. The cartilage in several spots is pitted, and granulation tissue has extended upwards through the degenerated cartilage from the underlying vascular structures. Simultaneously with these changes there commonly occurs an extension of granulation tissue from the synovial membrane at the periphery of the articular surface.

Should the opposing bone of the articulation be undergoing similar changes, and no excessive fluid separate the two surfaces particularly also if movement be limited, the two layers of fibrous tissue may unite and finally lead to complete ankylosis.

The further changes which may take place in such joints depend on several factors. Perhaps the most important of these is whether the causal condition has terminated, or whether destruction and consequent new formation of tissue are continued or repeated. It is this progressive destruction and proliferation of new tissue which eventually is responsible for the extreme deformities which are so common in chronic arthritis. Another factor which must not be neglected is the tendency of all the joint structure, the synovial membrane the cartilage—both perichondrial and hyaline, and the endosteum in inflammatory and proliferative states, to metaplasia. In all cases of arthritis the synovial membrane shows considerable reaction. At first it is simply congested, later its lymphoid structure becomes hyperplastic and it assumes a villous appearance. Fibrous changes may occur in these villi, and finally cartilage or even bone may be produced. The loose bodies found in so many arthritic joints are chiefly composed of cartilage or bone, and for the most part are detached inflammatory metaplastic synovial proliferations. Calcification and transformation of cartilage into a fibrillated structure resembling fibrous tissue are also common events. Also perichondrial fibrous tissue commonly becomes changed into typical hyaline cartilage. The deeper layers of the cartilage may also proliferate, forming large nodules of hyaline cartilage or bone. The greatest metaplasia, however, is found in the epiphyseal inflammation, where bone or cartilage as a rule tends to be formed.

ALBANY MEDICAL ANNALS

Original Communications

REPORT OF TWO CASES EXHIBITING LESIONS OF SPECIAL INTEREST FOR THE LOCALIZATION OF APHASIC DISORDERS.

*Presentation of Specimens. Read at the Thirty-eighth Annual Meeting of
The American Neurological Association, held in Boston, Mass., May
30th to June 1, 1912.*

BY LA SALLE ARCHAMBAULT, M. D.,

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the Albany City Hospital and to the Troy City Hospital.*

I have in my possession the brains of two individuals who were carefully observed clinically. The lesions which they present do not fully harmonize with the classic conception of the pathology of aphasia. While I have neither the intention nor the desire of reopening the controversy on the localization of aphasic disorders, I feel that, inasmuch as accurate data, both clinical and anatomic, are available in these cases, the facts may be sufficiently interesting to be submitted to the members of the Association.

Case 1.—Mr. M. C., 70 years of age, the father of three children and a launderer by occupation.

The patient had been more or less constantly under observation during the four or five years which preceded his last illness, owing to the fact that he had developed, at the age of 60, a rather well-defined postero-lateral sclerosis which later necessitated his admission to a hospital for chronic invalids. There existed, therefore, abundant opportunity to become acquainted with him and to note carefully both his personal characteristics and the features of his subsequent ailments. It is well established that the man was right-handed.

The characters of his medullary affection hardly demand any description here, as they present nothing of immediate interest to us in the study of the cerebral lesion with which we are actually concerned.

In February 1910, the patient had a severe attack of lobar pneumonia which left him in a state of profound prostration. It was at this time that the first indications of focal cerebral disorder came to notice.

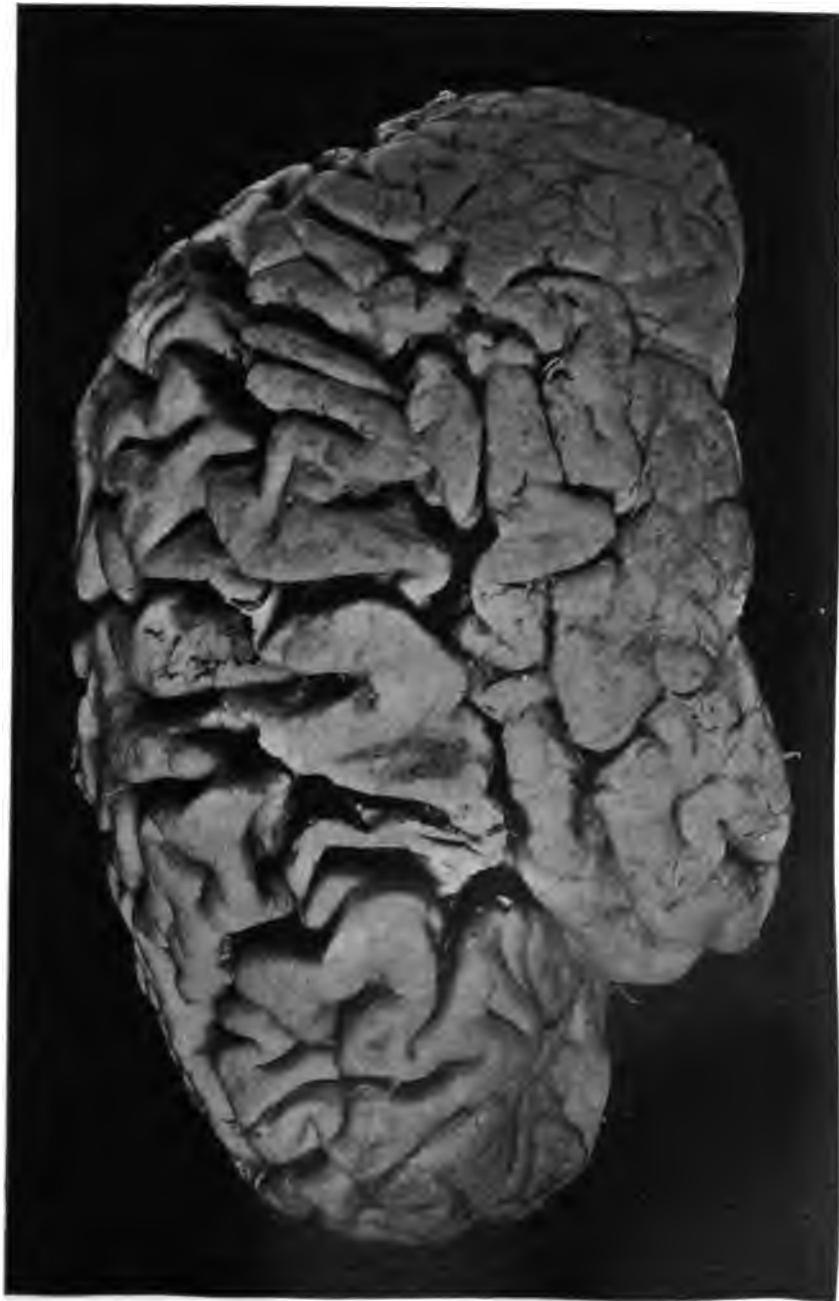
Although nothing definite could be ascertained regarding its mode of onset, a hemiplegia of unevenly distributed intensity had developed on the right side. While the lower extremity was hardly weaker than it had been before and the face showed but limited palsy, the upper extremity was almost absolutely inert. The arm was held in a fixed attitude of semi-flexion and complete pronation and immediately returned to this position whenever an attempt was made to overcome it by passive movements. The tendon reflexes were all distinctly livelier on the right than on the left side, but the Babinski phenomenon was not observed. While the patient was evidently depressed as the result of this additional disability and spoke little, there was no evidence of either disorientation or other impairment of the higher mental faculties. His speech was slow and monotonous, but it had been so habitually. The first letter or syllable, especially of a long word, was sometimes imperfectly articulated, so that a certain degree of dysarthria was occasionally observed. The patient never failed, however, to find the desired word. He understood perfectly all that was said to him, answered questions correctly and was quite able to read as well as he ever had. He was submitted to all the tests usually employed for the detection of aphasic disorders, but no deficit whatever could be demonstrated. The various tests were repeatedly applied subsequently and they invariably yielded negative results. Although the patient rallied remarkably well at first from his paralytic stroke, his general strength gradually ebbed away and he died June 2, 1910, without having materially recovered from his brachial monoplegia. He was kept under close observation during this entire period and no additional phenomena appeared. There can be no doubt, therefore, that this patient never exhibited the least trace of motor aphasia.

At the autopsy the brain presented evidence both of diffuse retrogressive changes and of focal disease. There existed a generalized chronic leptomeningitis associated with well-marked cortical atrophy and fairly pronounced ventricular dilatation. The cerebral blood vessels generally exhibited a considerable degree of atheroma. In the left cerebral hemisphere, a sharply circumscribed area of softening was found at the point of bifurcation of the Sylvian fissure. This lesion as the specimen distinctly shows (See Plate), destroys completely the posterior third of the inferior frontal convolution and slightly involves the inferior third of the ascending frontal convolution. The hemisphere has been purposely left intact as it is to be utilized later for the study of secondary degeneration. I do not see, however, that sectioning the specimen would affect in any way the conclusion which practically forces itself upon us, namely, that a lesion of the left inferior frontal convolution in a right-handed individual does not necessarily determine motor aphasia.

Case II.—Mrs. J. W. C., age 54, the mother of two children, and a woman of high culture and fine intellectual attainments. Patient was right-handed.

Her past history furnished nothing of particular significance with the

To Illustrate Dr. Archambault's Article on "Report of Two Cases Exhibiting
Lesions of Special Interest for the Localization of Aphasic Disorders"
Albany Medical Annals, March, 1913.



exception of the fact that the patient suffered from chronic interstitial nephritis and from cardiac valvular disease.

The first manifestation of cerebral disorder appeared June 12th, 1908. The patient had journeyed with some friends to and from a neighboring city on a Hudson River boat, and, although she seemed to be enjoying her usual health, she did not say a word during the entire trip. Peculiar as this was, most of the party regarded her mutism as a manifestation of ill-humor and purposely avoided taking further notice of the circumstance. Upon returning, however, and just as she entered the station, the patient was seized with a very severe convolution associated with loss of consciousness. As she subsequently showed no more disposition to speak than she had prior to the attack, it became evident to all that her condition was extremely serious and the family physician was hastily summoned. Motor aphasia was complete and remained complete for fully one week. The patient later regained entirely her ability to speak fluently, but only after three or four weeks had elapsed. There was an associated agraphia which likewise cleared up at the same time. After the patient recovered the power of speech, she exhibited no trace whatever of dysarthria, nor was there any evidence of sensory aphasia. From this time on, and during a period covering almost three years, severe convulsions followed by motor aphasia of one to three days' duration occurred with almost the periodicity of true epilepsy at intervals of about six weeks.

On the 20th day of February, 1911, the patient had a severe apoplectic attack accompanied by coma which lasted somewhat less than twenty-four hours. As consciousness returned, a residual right-sided hemiplegia and complete motor aphasia became manifest. The patient was quite unable to say anything for fully three days. Then it became possible for her to say "yes," "no," "water" and a few other simple words, to which still others were gradually but very slowly added. She continued to thus increase her word-supply until about the eighth week after the onset of her paralytic disorder, but this increase did not amount to much more than a recovery of about one-fifth of her original vocabulary, if it equalled as much. Spontaneous speech was not much in evidence and usually required some urgent need for its manifestation. Whatever the patient did say was spoken in answer to direct questioning, and in so doing she rarely completed a sentence. Almost invariably it had to be completed for her, either by the nurse in charge or by a member of the family. Generally, she could repeat the word after once hearing it, but sometimes she could not. As is usually the case, the names of persons and things were those which failed her most completely. The names of her family, of her own children, she could not produce, and then she would point to their photographs on the wall or on the mantel-piece and indicate with the finger which one she referred to. As she rarely completed a sentence and a good part of it had to be completed, often by pure guess-work, it sometimes happened that the companion's best effort was not successful and that the patient's meaning or purpose was not expressed. She would then interpose at once and say "no, not

that." She very seldom used the wrong word, but exceptionally she did, and then she would use a particularly irrelevant term. She never failed, however, to appreciate the fact at once. There was no dysarthria; whatever the patient said was correctly articulated. There was at no time the least evidence of word-deafness or sensory aphasia. Perfectly oriented as to all that occurred around and about her, and fully realizing the significance and gravity of her own malady, the patient was visibly depressed and frequently expressed the desire that she might die. Owing to her constant brooding, her faculty of attention appeared distinctly more impaired than it actually was. Her powers of comprehension at all times seemed perfectly intact. The patient could not read nor would she allow any one to read to her—a pastime which repeatedly suggested itself owing to the limitations in conversational exchanges. Nothing definite is known as regards the patient's ability to do simple problems in arithmetic, to read the hour on a watch, etc. The fact is that opportunity to apply all the desired tests was not available.

The paralytic manifestations cleared up slowly but nevertheless sufficiently to enable the patient to walk about the house with comparative ease. In the upper extremity also, motion returned to some extent, particularly at the shoulder and at the elbow, so that the forearm could be flexed and the arm adducted and raised to the level of the chin. The patient still continued to have severe convulsions at fairly regular intervals, and each time there followed a complete loss of motor speech of one or two days' duration. After that her word-supply would regain its former proportions. The patient lived in this way several months, and then failed rapidly owing to a sudden aggravation of her cardio-renal inadequacy. She developed pulmonary oedema and died May 19th, 1911.

Fortunately an autopsy was obtained. It is intended to describe only the lesions found in the brain; the findings in the other internal organs having no immediate bearing on the subject of this communication. The membranes and the surface of the brain presented no abnormal features either over the convexity or at the base. In the latter situation, however, a very marked degree of atheroma was observed in the circle of Willis and in the basilar artery and its branches. Horizontal sections through the entire brain reveal the presence of three distinct lesions in the left cerebral hemisphere. The largest of these, and that which first attracted attention, is a hemorrhagic focus of approximately three months' standing which occupies and completely destroys the posterior two-thirds of the outer segment (putamen) of the lenticular nucleus and the corresponding portion of the external capsule, the claustrum and the subcortex of the island of Reil. This lesion is situated in the lower or ventral half of the lenticular nucleus, and is best seen on a horizontal section passing below the corpus callosum and immediately above the floor of the frontal and sphenoidal horns of the lateral ventricle. This plane overlies the anterior commissure and the external geniculate body, and brings into view the three divisions of the lenticular nucleus, the lowermost portion of the pulvinar of the optic thalamus, the corpus subthalamicum and the red nucleus. Above, the lesion apparently does

not extend beyond a point situated in the same horizontal plane as the dorsal capsule of the red nucleus. Internally, it involves the extreme posterior angle of the middle segment of the lenticular nucleus, but seems to respect entirely the posterior limb of the internal capsule. Behind and below the lenticular nucleus, however, the retrolenticular and sub-lenticular divisions of the internal capsule are unquestionably severed almost completely. In the retrolenticular region, the lesion extends as far backward as a line drawn transversely across the hemisphere through the posterior margin of the pulvinar of the optic thalamus. In this situation, the focus remains confined to the subcortical substance of the retro-insular region and spares entirely the periventricular sagittal layers. The lesion involves, at this point, mainly the deep temporal lobule of Déjerine and the superior temporal convolution.

A second lesion is seen in the frontal lobe on a horizontal section passing above the corpus callosum and through the centrum semiovale. This lesion, of much older date, consists of a somewhat triangular apoplectic cyst having three short linear extensions. It is situated in the middle segment of the superior frontal convolution and dips downward into the corresponding portion of the middle or second frontal convolution. On a horizontal section passing below the roof of the lateral ventricle, through the velum interpositum and the dorsal surface of the optic thalamus, the lesion involves the subcortex of the middle or second frontal convolution, and still extends forward into the superior frontal convolution. It is situated, at this point, outside of and distinctly anterior to the hook formed, at the antero-external angle of the lateral ventricle, by the congregating fibres of the corpus callosum. The inferior or third frontal convolution appears absolutely intact.

A third lesion of similar character is seen in the angular gyrus. This focus is hardly larger than a split-pea, irregularly oval in outline and is situated in the cortical substance of the angular gyrus, immediately behind the termination of the parallel fissure; in other words, it lies at the junction of the angular gyrus with the base of the second temporal convolution.

In discussing the pathogeny of the various clinical manifestations presented by the patient, it would seem logical to suppose that the periodic epileptiform convulsions were due to the old hemorrhagic focus in the second frontal convolution. This lesion, extending at two points into the actual cortex, was evidently capable of producing considerable cortical irritation. The complete motor aphasia of one to two weeks' duration which marked the onset of the convulsive seizures was due, in all probabilities, to the pressure exerted at the time, upon the proximal regions, by the effused blood and the perifocal oedema. It is interesting to note, incidentally, that this initial aphasia was accompanied by well-marked agraphia which subsequently

disappeared, however, and never returned except as a result of the later paralytic disorder. The lesion being practically confined to the middle segment of the second frontal convolution, this case would seem to confirm, in a certain measure, the views expressed by certain authors regarding the existence of a writing centre and its localization in the left second frontal convolution. It will be remembered that valuable communications on the subject have been presented before the society by Dr. Gordinier and by Dr. McConnell.

The evanescent motor aphasia which followed regularly each convulsive attack is more difficult to explain. We still know very little of the changes, vascular or otherwise, which precede, accompany or follow convulsive seizures, whether we have to do with cases of so-called idiopathic epilepsy, or cases in which some focal cortical lesion underlies the occurrence of epileptiform convulsions. In our case, as already stated, we have, as the probable cause of these manifestations, an intracortical hemorrhagic cyst of the second frontal convolution; in itself, however, this lesion cannot be regarded as having determined motor aphasia. The speech defect only appeared as a sequel of the convulsive attacks and rapidly disappeared entirely. It therefore required for its production the intervention of some additional factor having itself but a passing influence. It would seem plausible to incriminate a transitory oedema as the cause of the transitory aphasia. This is a mere hypothesis, however, which is offered for want of more firmly established data. The next question which naturally arises is: what region or area is it which has necessarily been affected by the repeated vascular disturbances in order that repeated attacks of motor aphasia should have ensued? One is easily led to admit at once, in accordance with the classic doctrine of aphasia, that the third frontal convolution was the region so involved. This becomes all the more admissible here owing to the actual contiguity of the parts concerned. It may well be that such is the correct interpretation of the clinical manifestations observed, although, properly speaking, we have no proof of it. In this connection, I would like to recall the case of a man who presented a fairly analogous history. The patient exhibited, during a period of about eighteen months, typical Jacksonian attacks which recurred at intervals of five or six weeks and invariably began

in the musculature of the right hand and forearm. Each convulsive seizure was followed by complete loss of motor speech lasting usually one entire day, sometimes however less than half a day. These manifestations having appeared sufficiently distinctive, a trephining operation was undertaken with the hope of removing a circumscribed cortical lesion. The brain was uncovered over the left arm area and although considerable surface was exposed, no abnormal conditions were encountered. The patient subsequently died of some intercurrent affection. At the autopsy, the only cerebral lesion found was a patch of softening in the left hemisphere, absolutely limited to the posterior half of the gyrus hippocampus and to the adjoining portion of the fusiform lobule. The brain was utilized for the study of secondary degeneration, and as serial sections were obtained all the way from the frontal to the occipital pole, I am quite able to state positively that there were no lesions in any other part of the brain.

Whatever may have been the mechanism involved in producing the transitory post-epileptic aphasia in the patient whose case-history I have just reported, and whatever may have been the seat of functional disorder, the fact remains that a well-marked and permanent impairment of motor speech only appeared after the occurrence of the well-characterized apoplectic attack due to hemorrhage within the lenticular nucleus. This does not at all mean that the lenticular deficit itself is responsible for the aphasic disorder since other structures were likewise involved, notably the external capsule and the subcortex of the island of Reil. It simply means that a destructive lesion of the lenticular area is capable of producing definite and permanent motor speech defect, independently of any involvement of the inferior or third frontal convolution. In our case, this convolution not only seems perfectly intact, but I feel reasonably certain that the projection fibres derived from it and coursing toward the internal capsule and the basal ganglia are not intercepted by the lenticular focus. It is possible that lenticular localizations may determine motor aphasia by implicating the adjacent association bundle—the fasciculus uncinatus.

The whole question of cerebral localization still remains deeply entangled owing to the frequent difficulty of correctly interpreting lesions and of accurately comparing the findings

in different cases. There are so many factors which must be taken into consideration. The actual case affords a striking example of the many contradictions with which we are often confronted; it furnishes arguments both for and against the ruling conception of aphasic disorders. We have learned to consider that in right-handed individuals the causative lesion of alexia is a lesion of the left angular gyrus. This alexia was unquestionably present in our patient, and the brain distinctly shows a lesion strictly limited to the left angular gyrus. How easy it would be to assume a causal relationship in this particular instance. Yet, it is a fact positively established that the patient never exhibited the least trace of alexia until the onset of her paralytic disorder, and it is equally undeniable that the focus in the angular gyrus antedated this by a very considerable period. The lesion has all the appearances of a well-defined hemorrhagic cyst of at least a year's existence.

In terminating, it seems to me that the facts furnished by the study of the cases reported in this communication fully substantiate the contentions of Pierre Marie and justify the following conclusions:

1. A lesion of the left inferior frontal convolution in a right-handed individual does not necessarily determine motor aphasia.

2. A lesion of the left lenticular region in a right-handed individual may in itself suffice to produce well-marked and permanent motor aphasia.

MENTAL HYGIENE IN THE WIDENING SPHERE OF PREVENTIVE MEDICINE.

*Read at a meeting of the New Jersey Sanitary Association at Lakewood,
New Jersey, December 6, 1912.*

BY THOMAS W. SALMON, M. D.,

*Passed Assistant Surgeon, U. S. Public Health Service, Director of Special Studies,
National Committee for Mental Hygiene.*

I.

Within a comparatively few years we have seen the scope of preventive medicine widen very greatly. The control of many of the infectious diseases has come within our power and the complete eradication of some of them is now known to be within the bounds of possibility. A list of the victories won in sanita-

tion during the last few years is a stirring account of progress in what Dr. Osler has termed "Man's Redemption of Man." It is doubtful if as great advances have been made in any other department of science. Such achievements have very naturally quickened popular interest in all that relates to the prevention of disease and so it is not surprising that this wide-spread interest in preventive medicine should extend to other fields than the control of the infections.

During the last few years more careful study of individuals suffering from mental disease has afforded a great deal of information as to the causes of insanity and a new hope, that of lessening the appalling prevalence of mental disease, has come into existence. To be sure much that relates to the causes of mental disease is still obscure and the exact part played by many factors is often in doubt but it can be said that there is, at this time, a great amount of information which can be utilized effectively in the prevention of mental disease.

We know, for instance, that about one-fifth of all men admitted from cities to hospitals for the insane in this country are suffering from general paresis, a form of mental disease dependent absolutely upon previous infection with syphilis. We know that syphilis, in less direct ways, is responsible for a certain proportion of cases of other types of mental disease. The prevention of general paresis is, therefore, the prevention of syphilis and this consists in venereal prophylaxis, whether accomplished by police regulation of prostitution, moral control or personal measures of prevention. We know that about twelve per cent of all patients admitted to institutions for the insane have alcoholic psychoses—mental diseases which can only result from intemperance. These psychoses, too, are strictly preventable and so it is seen that the mental diseases resulting from syphilis and those resulting from intemperance, two preventable causes, constitute together, one-fourth of all admissions. A wide field for preventive measures in insanity exists then if we consider no other types of mental disease than these.

We know that about three per cent of all cases of insanity are due, in part at least, to such infectious diseases as typhoid fever, influenza and septicaemia. The prevention of these infectious diseases, therefore, must also prevent the mental diseases which depend upon them. These causes are *specific* causes of insanity.

Issues are clearly defined and in discussing them it is possible to speak with some assurance and to employ statistics with a considerable degree of confidence. There are, however, a number of mental disorders in which some of the causes are apparent but in which preventive measures are extremely difficult to apply. The origins of these mental diseases seem often to be in all sorts of difficulties with the environment—failures of adaptation—and these difficulties seem to arise from distorted ideals, false views of life, deficient sense of personal responsibility, imperfect assimilation of experiences especially in the sexual fields or from the ascendancy of fears and doubts. In many cases the inadequacies of the individual which make it impossible for them to adjust themselves to the world as it is and to meet moderately difficult situations and which lead them, instead, to attempt to alter their environment or to begin futile struggles with it, seem to depend chiefly upon certain inherent defects. There are, nevertheless, many other cases in which one cannot fail to see that some of these disastrous conflicts might have been avoided. When the psychiatrist sees such people for the first time it is usually too late to unravel the tangled skeins but the histories of these cases often show unmistakably that grave and needless mistakes have been made in training and education, that easily preventable sexual traumata have been inflicted in early life or that dangerous trends of thought or unhealthful use of imagination have been allowed to develop unchecked or even have been encouraged.

Such causes of insanity must be regarded as preventable, at least to a certain extent, although their influence is exerted in a manner very different from that of syphilis and intemperance. Although we cannot say how large a percentage of all cases of insanity belong in this group or what proportion of cases in this group is preventable, the fact that *any* such cases may be prevented and are not is at once a reproach and a challenge. It is apparent that the very first requisite for any serious attempt to prevent mental diseases dependent upon such factors as these is much greater popular knowledge of the nature of mental diseases than exists to-day. A vast amount of accumulated misinformation regarding the insane must be removed and replaced with facts before the simplest means of prevention can be made generally known. The task would seem hopeless if

we did not recall how much has been done in popular education in other matters affecting health. How little was known by the public ten years ago about tuberculosis or about the hygiene of infancy compared with that which is common knowledge at the present time! It seems that, ultimately, effective work in mental hygiene will require some fundamental changes in the purposes of education (meaning education in its broadest sense) for it is apparent to every psychiatrist that many young men and young women are wholly without that knowldg^e of themselves which would enable them to present at least a passable resistance to influences which lead to serious mental disorders. Before that is possible much may be done, however, by those who, like teachers, physicians and clergymen, help to mould human lives and to influence ideals and aims.

The second important need in this phase of the prevention of mental disease is undoubtedly the need for earlier recognition of mental disorders, or, better still, for the early recognition of some of the factors which lead to mental disorder. At the present time nearly a third of all patients admitted to institutions for the insane have had definite signs of mental disease for a year before their admission. The most obvious remedy for this deplorable condition is more information on the part of the public regarding mental disease but it is even more important that general practitioners should know more about mental diseases, especially their early manifestations and that they should recognize the significance of certain trends. This is said with full appreciation of the manifold responsibilities of the general practitioner; but the tremendous importance of the early recognition of insanity and of those factors which lead to insanity demands that more attention be paid to this branch of medicine. The general practitioner possesses an intimacy with the family and its environment which gives him enormous opportunities for work in mental hygiene and I earnestly believe that no other agency for the preservation of mental health and for the prevention of mental disease can compare with the efforts of a group of medical practitioners fully alive to this responsibility and adequately informed on the subject.

It is not possible to take more time to consider the preventable and manageable causes of mental disease and it is, perhaps, unnecessary for it will be generally admitted that here is a

fertile field of endeavor and one in which practically nothing has yet been done. As to the importance of doing something to prevent mental diseases, little need be said. We know that at the present time there are more than 200,000 insane persons in institutions in the United States, a number exceeding the combined enlisted force of the U. S. Army, Navy and Marine Corps and also exceeding the total number of students enrolled in all the colleges and universities in the United States. A few days ago I saw an estimate by the New York State Department of Health that there were 50,000 persons afflicted with tuberculosis in that State. There are, in New York State institutions for the insane at the present time, 35,000 insane persons and I believe that if there were added to this number those already insane who will be admitted within the coming year, those who have been discharged unimproved during the year just closing and those who will never receive institution care, the number will be found to equal the number of consumptives. I am informed by the National Committee for the Study and Prevention of Tuberculosis that there are 30,000 hospital beds in the United States for patients afflicted with tuberculosis. We know that there are 200,000 hospital beds for the insane and that no class of the sick receiving institutional care is as numerous.

Without dwelling further upon the importance of the control of mental diseases we may consider upon what general lines effective work in prevention can be undertaken. It is the belief of many of those who have given thought to the matter that this vast work is not the task of individuals but of a powerful national society, supported by efficient societies in every state and large community. This belief led to the organization of the National Committee for Mental Hygiene. The organization of this committee was the idea of Mr. Clifford W. Beers, whose book, "A Mind That Found Itself," aroused a new popular interest in the welfare of the insane. The organization suggested by Mr. Beers was perfected by the co-operation of many physicians, philanthropists, social workers, and others who recognized the need of effective work upon a national basis in behalf of these unfortunates. A plan of work for the National Committee for Mental Hygiene has been most carefully prepared, and a recent gift of \$50,000 has made it possible to put this plan into execution.

II.

It is not with the prevention of mental diseases, however, that the National Committee for Mental Hygiene is exclusively concerned. The general lack of information regarding mental diseases which has permitted many persons to become insane from preventable or manageable causes has also resulted in standards for the care of those suffering from mental disorders which are radically different from those which govern the care of other sick persons.

In a few enlightened States the care of the insane is a matter of just pride, but there is not a single condition which existed in the early period of their neglect and abuse which does not exist to-day in some American community. It is a fact that many of the stages in the long and painful history of the care of the insane, from 1537, when the first institution for the insane in England was provided, to the present time, could actually be studied in some American community this afternoon. Care in county almshouses, which was abolished forever in New York in 1890, exists in some form in fourteen States to-day. Conditions of wretchedness and degradation, as bad as those which awakened the public conscience and led to the establishment of the Willard State Hospital, are tolerated in some States at the present time and in some of these States no active movement for betterment is under way. In a number of States there is provided a complete system of State care for all classes of the insane, with reference, not to their curability, but to their needs, while in some of our greatest States it is expressly provided by law that State hospitals shall not be used for the care of "cases of chronic unsoundness of mind."

In some States, when mental disease suddenly complicates the course of an acute, infectious disease, or attacks the mother who has recently borne a child, an ambulance can be summoned and the patient carried to a suitable hospital where treatment can be begun which will restore her to health—all her "rights" (including the right to be humanely cared for) being entirely safeguarded by the provisions of the "emergency commitment." In another State, separated from the first by only an imaginary line, a similar patient would have to have the charge of insanity preferred against her by her husband, be haled into court (personal appearance not being waived on account of

her critical condition), and there tried and convicted by a jury of her peers before she could receive institution care. In one State it is a crime to keep insane persons in a jail or prison. In another there is no serious attempt to take them out.

It is a very important part of the work of a national organization for mental hygiene to see that advances in the care of the insane shall be uniform. It is a sad reflection upon our national unity that the insane can be cared for in one State in conformity to standards of 1820 in another those of 1850, and in a third those of 1912. Standards which are established in one State should be reached in others. Mistakes should not be made in one State because of entire unfamiliarity with what has been attempted and has failed in another.

Fortunately we have some agencies which can be employed for these purposes and which can continue in all the States the work which has progressed so far in a few. The Connecticut Society for Mental Hygiene, the first State Society for Mental Hygiene in this country, was organized four years ago. This society maintains a department for social service work in mental hygiene. Already the Connecticut Society has accomplished a great deal. Much of its work, particularly after-care, is done in co-operation with hospital authorities, but it is interesting to know that the means of contact with eighty per cent of the cases aided last year were independent of hospitals. The Illinois Society for Mental Hygiene was organized in July, 1910. This society has eased the lot of many insane by shielding them from the harsh methods of commitment which have existed in Illinois, especially in Chicago. In New York the State Charities' Aid Association which has done so much for the welfare of the insane poor of New York, and has taken the lead in securing epoch-making reforms in their care, has a Committee on Mental Hygiene which is doing work similar to that done in Illinois and Chicago, and is conducting an active educational campaign in the work of prevention. Movements are under way in several other States for the formation of State Societies for Mental Hygiene, all of which will be affiliated with the National Committee for Mental Hygiene.

The first work of the National Committee for Mental Hygiene in this field is to be "the collection of accurate information regarding the present status of the care of the insane in the

United States, the laws relating to their commitment and discharge, and extent and character of institutional care, the conditions under which those outside of special institutions are cared for, the various means of State control or supervision, the extent of the various systems of care, such as "State care," "County care," etc., the factors which tend to promote or to obstruct early treatment, and the provisions existing for the care of insane persons prior to their commitment."

The inadequate means of caring for the insane to-day in many localities, and the needless hardships which some present methods of commitment entail, make an insistent appeal to one's sympathies, and it is difficult to resist embarking immediately upon the work of amelioration now that an organization and funds are available. It seems absolutely necessary, however, that such novel and important work should not be undertaken without preparation. We must realize that we are but partially informed. There has been no national survey of the situation, and careful studies made in different States have been very few in number and have usually had for their object some very specific purpose. Many useful movements for the betterment of the sick have failed, because active work has been commenced with an insufficient equipment of facts. It has been resolved that this is not to be the case with the work of the National Committee for Mental Hygiene, and so a period of study and preparation is to come first.

Considerable progress has already been made. A careful plan for the systematic study of this country's institutions has been prepared, an estimate of the cost of such a study has been made, and the actual work of collecting information has been begun. After a preparatory study of reports of institutions and State boards, and of general statistics, it is planned to visit a large number of institutions and also to observe the actual operation of all the steps in the transfer of an insane person from his home to the hospital in a number of different kinds of communities.

It is realized that the insanity laws of the various States constitute the groundwork for the care of the insane and the commitment of insane persons. Therefore a compilation of the laws of all the States relating to the insane has been prepared by Mr. John Koren, who has conducted for a number of years the

studies of the insane and defective classes made by the United States Census Bureau. This compilation, which has involved a vast amount of work, and which could not have been carried to its completion without expert knowledge in this particular field, has just been published by our organization.

It is believed that in less than a year this carefully planned study of the situation will place the National Committee for Mental Hygiene in possession of much accurate information. It is planned that much of this work will be continuous and permanent, for one of the functions of the National Committee for Mental Hygiene will be to supply, for the use of workers in local fields, absolutely reliable information upon many of the various phases of the care of the insane in the United States. It is not, however, primarily for such a purpose that this general view of the situation is being obtained. The chief aim is to secure the equipment needed for a vigorous, sustained, and successful effort to improve the lot of the insane in this country. Already, work in popular education in matters relating to the insane has been started and plans are being made for the wide use of an exhibit on Mental Hygiene which has attracted a great deal of attention in Washington and New York.

It is planned to carry on remedial work through State societies or committees for mental hygiene, similar to those in Connecticut, Illinois, and New York. Each such society will constitute a centre for useful activity, and it is believed that through such agencies the National Committee for Mental Hygiene can best perform its mission.

SOME FACTS CONCERNING THE PERIODICITY OF INEBRIETY

By T. D. CROTHERS, M. D.,

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The alternations of exhilaration and depression in the activities of the brain and nervous system are considered mere ebbs and flows of nerve energies of little or no physiological interest.

When these alternations appear in diseases and degenerations of the brain and nervous system they come into prominence as distinct forces, following uniform laws of cause and effect. The

neuralgic migraines, the epilepsies, some of the insanities and a great variety of nerve and functional activities are familiar illustrations.

The drink neurotic who abstains for distinct periods and then suddenly breaks out with insane cravings for spirits which after a time die away, only to be followed by another outbreak of a similar character, is an example of these unknown cycle degenerations.

At one time it is a delirium, intense, over-powering and irresistible and then a period of quiet rest, sanity and complete control comes on. At one time it is the rigid moralist, strict abstainer and sound, strong man. At another it is the excessive drinker, immoral, dishonest, without character and reckless of his acts and conduct.

To the unreasoning public and the foolish theorist, this is simply vice, an outbreak of the animal instincts and the beast part of the man. The most delusive and stupid theories have become a great literature in explanations of these two widely differing conditions. The statement that it is simply a gathering and breaking of morbid energies and activities of the brain and nervous functions, governed by distinct physical laws, is not recognized to any great extent.

Some facts common to these conditions will show how thoroughly they are physical and subject to laws which are to be studied. In all probability fully sixty per cent of all inebriates and alcoholics display this periodicity of symptoms.

In the distinct periodical drinker the free intervals are very often definite as to time, varying from one week to several years and in many cases breaking out at intervals that are as fixed and unvarying as the movement of the stars. In others this interval of freedom from the drink craze is variable and in some cases depends on certain conditions which may be often forecasted, controlled and prevented. In others the conditions are unknown and the laws that govern their culmination and explosion are not studied.

There is a small class of persons in which the drink impulse appears as mysteriously as the flash of electricity in a cloudless sky. No premonition or hint of the coming attack. Often it disappears in the same mysterious way.

An attempt at classification indicates several groups which

seem to have fairly constant symptoms. Thus in many cases they may be called the insane impulsive periodic inebriates. The free interval is an unknown condition and the return of the drink craze is abrupt and unexpected. The man will drink and become crazed at the most inopportune time, on the eve of marriage or some great social, political or literary triumph, or some business success, or on a public occasion or at a funeral, where this condition is most disastrous for his future.

A very poor young man with a large family, who had been sober for some weeks was informed that his uncle had left him an immense sum of money, contingent on his remaining sober for one year. Immediately on hearing the news he drank to great excess for weeks.

The reaction when this obsession disappears and the sudden realization of the losses, precipitates suicide. The remorse is so intense that death is preferred. Others when the drink craze passes off, show the most intense anxiety to explain and minimize the losses which they have suffered from, and also make earnest efforts to convince their friends that this will never occur again.

The memory is usually vague and events of the past are uncertain and cloudy. In others the memory is clear and intact. The reason and judgment seem to have been suddenly arrested and on recovery display unusual activity to promote total abstinence in himself and friends. The extreme delirious excitement to help others and to show the dangers from alcohol and promote the cause of total abstinence, so prominent in revival meetings is not unfrequently the after effect of previous alcoholic excesses. Sometimes this is manifested in egotism and childish appeals to credulity, away beyond the bounds of rational judgment and sense.

Another class of these periodics, exhibit distinct premonitory symptoms of the drink craze. Curiously enough, they are unconscious of these premonitions. The more common of these symptoms are degrees of unusual excitement or depression, great business energy or unusual apathy, perhaps exaltation of the emotions or depressive states with fears of poverty, and sudden death. There is a great variety of these symptoms which take on almost every form of abnormality, all leading up to the

toxic use of spirits, usually to stupor and this period is marked by amnesias and delusions that are peculiar to the person.

Sometimes these premonitory symptoms are apparent in hallucinations of sight and hearing or sensory delusions in different parts of the body. At other times there are deliriums of intrigue and low cunning and egotistic duplicities and prevarications, foreign to their previous character.

When spirits are used up to a certain point, all these disappear, generally after the first intoxication. Another class of periodics will have premonitory symptoms of childish reasoning and credulities of the presence of some disease, which will eventually suggest spirits as a remedy. They are often very strong persons, in apparent good health, and seem oblivious to any past experience. Then suddenly they will have food and health delusions, with fears sending them to the physician, who will fail to find anything to sustain their own conceptions of the case.

An example was that of a very prominent lawyer who counselled with many physicians, complaining of most obscure and complex symptoms. Then suddenly he drank to great excess, and after a few days recovered without any conception of his previous alarm.

Another example was that of a noted banker, who once or twice a year exhibited extraordinary suspicion of persons with whom he was associated, and displayed unusual energy in trying to verify accounts and determine the exact amount in the vaults, examining books and vouchers with the idea of detecting some faults.

These premonitory symptoms are exceedingly varied and in some degree appear in every instance. The exact recurrence of the drink cycle, irrespective of other conditions and surroundings, is evident in many persons. The time in months, days and hours can be traced and the occurrence of the drink paroxysm is exact and literal.

It is a question whether the persons always understand that at such an interval they must drink spirits to excess. When they do, there is evidently a preparation for this event, and a degree of expectancy which makes it more exact and positive.

A number of cases have been noted where this period was a certain number of days and hours, rarely varying, and never

more than a day and returning under the most extraordinary circumstances.

Examples like the following are not infrequent. A man in previous good health, conducting business in the usual way, will suddenly stop, disappear and in a short time be found very much intoxicated. Professional men in the midst of most important duties will abruptly give the most frivolous excuses for a change in the work, and become stupid from drink in a short time.

In some instances persons show unusual anxiety to help others, take up some reform work with great energy, ending in a drink attack. Probably this is done in an effort to break up the imperative conception of the oncoming drink craze. The memory during this premonitory period, and even up to the close of the paroxysm is subject to wide variations. In some instances it is entirely a blank and no efforts to explain the reasons and the causes are made. In others there is a half consciousness of the condition, which is never clear and connected.

Very interesting questions have centered about the consciousness and capacity to realize this condition, but are still unsettled. The heredity of these cases is always very prominent.

Probably over sixty per cent have a neurotic heredity in which insanity, epilepsy, inebriety, idiocy and various other diseases are traceable in the parents and grandparents, pointing to an unstable neurotic condition that is favorable to the outbreak of this distinct form of neuroses.

Why it should take on the form of a craze for the narcotism of alcohol is not clear. In all probability this may be dependent on the errors of environment, nutrition and faulty mental training. Many of the persons studied show degenerations, perversions, both acquired and inherited. Others indicate a spasmodic tendency to gather and break like a storm, resembling epilepsy and often merging into it.

These periodicities seldom appear until after twenty years of age, and often subside or emerge into some serious degeneration before fifty. At first the length of the paroxysm is brief, confined to a few hours. Later it increases, extending over two or three weeks, then finally becoming shorter, and less intense.

The narcotism of spirits develops some other symptoms or conditions which obscure and change the former. There is intense loathing and repugnance for the odor and effects of

spirits and other drugs are taken. A period of a few years of periodic drinking, often merges into morphinism or the use of some other drug.

The periodic drinker, based on a neurotic heredity, frequently merges into epilepsy, paresis and forms of insanity, marked by exaltation and depression. The drink craze not unfrequently dies away, but obsessions remain, sometimes concentrating on widely differing objects. Thus a periodic drinker developed a craze for building houses, which extended over many years, each year building a new house for himself, with different designs and rooms.

Another man developed a craze for travel. Every few months he would stop business and go away, pursuing an aimless journey. Another man had a craze for dressing. Another one goes into politics, another becomes a reformer and so on through an almost infinite list of activities.

The original periodic desire for spirits remains, only it takes on a different form. Oftentimes these cycles appear in epidemic delusions, literally most credulous faiths in unreal theories; faith in commercial and social enterprises, credulous expectations of impossibilities, or on the other hand waves of pessimism, doubt and confusional conceptions of things.

A number of persons have been noted, who began in early life to drink at intervals and a few years afterwards gave up spirits, and developed into paranoiacs, defectives, eccentrics, and men very sharply unbalanced at times. In political circles, these periodic drinkers who are reformed appear very prominent.

The impulsiveness of conduct, sentiment and reason so prominent in many persons, are all phases of these mysterious cycles of brain activity. Spirits, either as a medicine or as a beverage are exceedingly dangerous for such persons. It is often a question of great doubt, whether any narcotics should be used.

They are all very susceptible to the alternations of drug effects. It is evident that a great many drug and spirit takers have been developed from this class of spasmodyc neurotics, by thoughtless medication.

Massed epilepsies both in men and women are of the same class and all indicate great instability and positive degenerations of certain brain centers, and are all suspicious of the possibilities of grave neuroses of some kind. The alcoholic who

has used spirits to the point of poisoning and has all the marked symptoms of congestion, toxemias and general perversions, is amenable to treatment, with every prospect of restoration and cure.

If with this alcoholism there is a hereditary influence and neuroses, the use of spirits may be a symptom at first as well as a cause. If the use of spirits began with distinct free intervals, there is still farther degeneration and still greater complexity in the prognosis as well as treatment.

The periodical return of the drink paroxysm should be treated successfully and can be broken up by a great variety of methods and means. The fact that one at intervals is possessed with the desire for drink is a very serious one and should not be treated lightly. The fact that one is able to stop after the period is over, is no evidence of strength, but is decidedly suspicious of a very grave spasmodic disease that will terminate fatally. The fact that periodical drinking preceded a case of pneumonia, is very grave.

The mortality is increased and any form of treatment is more and more impotent. The fact of spasmodic diseases in infancy predisposes to alcoholic periodicity, epilepsy and other neurosis that must be recognized in after treatment.

The gravity of the epileptic paroxysms depends on their duration and persistency. The same thing occurs in the alcoholic paroxysm, only that there are conditions which may be broken up, and thus lessen or check the paroxysm.

A number of persons afflicted in this way come under my care at intervals with the distinct purpose of checking and breaking up the paroxysm which is expected to occur at about a certain time. This is done in institutional treatment. The hope is that the paroxysm will not return again, until the cycle is completed, and this occurs in most instances, after short intervals of treatment extending over years.

Such persons should be taught the gravity of their condition and encouraged to seek help from the physicians, on the first approach of the paroxysm, and in this way break up its return, then become built up and restored so as to overcome the next onset.

Here is a field for practical physicians of the utmost importance, with possibilities of restoration, beyond any present conceptions.

M-SHAPED COLON.

Read at the Semi-Annual Meeting of the Medical Society of the County of Washington, October 1st, 1912.

By JOHN H. GUTMANN, M. D.,

Albany, N. Y.

I saw Mr. J. S., aged 55, a painter, in consultation with Dr. Ira Applebee, on Sunday the 11th of February, 1912. The patient complained of obstruction of the bowels. He said that on the 5th of February he became overheated while cutting down trees and drank cold ale. From this time on he vomited at intervals had pain in the abdomen and had no movement of the bowels. Enemas had been given with little result. Five years ago patient had painters colic and from time to time has been troubled considerably with constipation. He has lost about twenty-five pounds.

On examination I find this patient to be a tall, gaunt man who is evidently in great distress and pain. His expression is anxious, the skin is clammy and cold to the touch. Pulse, 110; temperature, 98. There is arterio-sclerosis. The heart is slightly enlarged; there are no murmurs. Marked emphysema of the lungs. The abdomen is markedly distended, tympanitic everywhere. Liver dulness gone. There is a point of tenderness just below the navel and the pain complained of is localized at this spot. From the onset of his illness there had been no fever, no tenesmus, no melena, though the patient had passed flatus.

A consideration of these facts led me to a diagnosis of intestinal kink and he was advised to enter the Hospital. However, the patient demurred and requested us to try some further medicinal means before resorting to operation and he was given morphine, one-quarter grain, hypodermically and a soap suds and ox gall enema. Within a short time the vomiting stopped and the patient warmed up, felt much better and had some sleep. On repeating the injection the next day some fecal material came away and later he was given an enema of camomile tea which seemed to bring away considerable gas and semi-solid material. The following day the patient was improved and he received calomel which gave him relief and he became better and eventually got about. He was advised to visit his physician regularly in order that further examination might be made in order to determine exactly where the trouble lay. During the early days of March there was a repetition of the affair with nausea, vomiting, distension, pain and tenderness and the patient entered the hospital on March 15th.

At this time his condition was practically as I found him in February with the exception that the attack seemed less severe. His systolic pressure was 199 and the diastolic 144. The urine had a Sp. gr. 1.028, was

alkaline and contained triple phosphates, calcium crystals and epithelial cells. The abdomen was hot-packed and he was given calomel in divided doses. On March 17th, he received one ounce of Epsom salt and the following day had a fair result with a glycerine-salt enema. On the 19th he took some aromatic cascara which was repeated on the 22nd and 23rd but the bowels did not move well till the 25th.

At this time I was making an effort to get this patient's bowels clear enough in order that a skiagraphic examination might be made. This was possible on the 27th when a series of plates was made by Dr. Berry. The twenty-four-hour plate showed a very acute bend in the transverse colon with the apex exactly at the point of tenderness complained of just below the navel. Operation was advised and accepted. The patient was prepared for a section which I did on the 29th of March at ten o'clock. I made an incision slightly to the left of the median line with the navel at the junction of its middle and lower third. The elongated transverse colon was immediately brought into the wound. It was exceedingly long. In fact it was so mobile that the mid point could be placed between the thighs. A thorough exploration was made to determine the existence of a new growth but none was found.

On drawing my hand out of the pelvis I felt a slight scratch on the back of one of my fingers and I immediately took up that loop of bowel. It happened to be a piece of ileum which showed a small calcified nodule about one-quarter inch in diameter lying in the mesentery about one inch from the attachment to the bowel. There were no enlarged glands anywhere. It was excised and on microscopical examination proved to contain true bone cells.

The colon was then replaced in its normal position within the abdomen and suspended from the abdominal wall by fastening the gastro-colic omentum to the parietal peritoneum at a point near the outer edge of the right rectus with a chromic stitch. The left side was treated in the same manner. The mid point of the gastro-colic omentum was then sewed into the upper angle of the wound and the incision was closed. Barring a slight rise in temperature on the second day the patient made a fine recovery. X-ray plates taken ten days later showed the transverse colon in a horizontal position, high in the abdominal cavity with no retardation of peristalsis. The bowels moved normally and have acted perfectly since. The patient has gained weight and is now following his regular occupation without any discomfort whatever.

This case is illustrative of a condition which is found in many of the patients coming to us daily, complaining of symptoms ranging in severity from simple constipation to the most obstinate obstruction of the intestinal tract. A review of the literature relative to its causation and treatment is interesting.

In early embryologic life the alimentary canal consists of a simple tube. As differentiation proceeds the primitive cephalic portion develops into the pharynx, oesophagus, stomach and part

of the duodenum. The caudal part becomes the descending colon and rectum. The midgut which at first is a mere groove, eventually becomes tubular and forms a loop ventrad from the apex of which it is connected with the yolk sac by the vitelline-duct. The upper, proximal part of this loop growing rapidly, forms most of the small intestines, which for a time, are projected into the umbilical cord. Just beneath this point, a caecal bud appears in the distal curve of the loop and the intestine below this bud rapidly enlarges to form the ascending and transverse colon. As the fetus develops, the entire tract elongates and a remarkable torsion takes place. The lower caecal enlargement is thrown over the small intestine to the right until the caecum occupies a position beneath the liver in the upper right hypochondriac region, and the transverse and descending segments of the colon come to take up their permanent locations by reason of the fixation at the splenic angle. Later the caecum burrows downward into the iliac fossa, thus making the ascending colon a definite entity. It can be appreciated that any irregularities in development, any fault or arrest in the normal torsion of the intestinal tube must produce an abnormality in the conformation of the large bowel. If the allowance of colon between the flexures is unusually great, a certain amount of ptosis must result and this is especially so if the upper abdomen is narrower than normal, in which instance it is many times a part of a more or less extensive visceroptosis. These divisions of the primitive alimentary tube, not only present different characteristics embryologically, but we shall see that the various primal segments exhibit distinctive functional features with a dividing point, a little beyond the middle of the transverse colon. The physiological functions of the large intestine differ in various animals and in the matter of movement, digestion and absorption man occupies an intermediate position between the carnivora and herbivora. It receives its nerve supply from the central nervous system; a tonic or motor supply through the sacral visceral nerves and an inhibitory supply from the lumbar cord through the sympathetic by way of the inferior mesenteric ganglion. According to Elliott and Barclay-Smith, the sacral visceral nerves do not innervate the region of anastalsis, that is the proximal one third of the colon. The food is carried by occasional peristaltic contractions through the relaxed ileo-

caecal valve into the proximal caecum, which it fills, provoking a contraction of the muscular walls near the hepatic flexure. As Cannon has demonstrated, these peristaltic waves start from a pulsating tonic ring which sends off contractions in a downward direction. New rings made at the terminus of these waves start reversed waves and a tonic contractile ring mid-way in the proximal colon not infrequently will originate waves which pass in both directions. These pulsations of the tonic ring and the discharge of waves are dependent mainly on a state of tension and occur whenever fresh quantities of food are introduced from the ileum or whenever portions of chyle arrive at new places in the colon. These waves occurring intermittently at the rate of five per minute, mainly antiperistaltic in character, force part of the food backward toward the caecum where it is prevented from re-entering the small bowel by the obliquity and integrity of the ileo-caecal valve. However, as the wave does not imply any advancing inhibition some of the food slips on in the axis of the gut.

In addition to this innervation the experiments of Cannon, Bayless, Starling and Magnus demonstrate that there is throughout the intestinal tube an intrinsic reflex arrangement whereby a stimulus causes a contraction above and a relaxation below the point of application, producing a peristaltic wave which gives an onward movement to the bowel contents. This reflex is due to the functioning of the nerve net lying between the muscular coats, and is known as the "myenteric plexus." As peristalsis subserves digestion and absorption, it is probable the operation of this reflex is designed to bring the food into relationship with new sites and fresh regions. It may be a peculiar relationship between the stage of digestion and the condition of the mucosa. Foodstuffs are absorbed at different rates in the different parts of the tube and probably the myenteric action is due to the varying nature of the intestinal contents. In addition to these phenomena the chyle is subjected to the action of segmentation or haustral churning which is to be considered as a local response to internal distention. Segmentation may occur independently of the myenteric reflex. Cannon says "the contraction that occurs in rhythmic segmentation is narrow involving hardly a centimetre of the circular coat, whereas the contraction that occurs in peristalsis extends along

the canal for four or five centimeters. A much larger number of circular fibres are evidently called into service by the myenteric reflex to push the food through the canal than are active in any single segmenting contraction. And furthermore the area of inhibition demonstrable in peristalsis does not exist in segmentation. Dogiel's description of neurones whose axons extend some distance from the cell body, giving off collaterals to other neurones in ganglia through which they pass offers a morphological basis for the conception. The food is thus churned by a pendulum or rocking motion which brings it into intimate relation with the bowel wall, the area of which is further increased by the sacculations.

Occasionally the distension provokes a true peristaltic wave which drives the food into the distal colon and sigmoid. By means of this kneading and mixing in the proximal colon, the greater part of the water of the chyle is absorbed together with some small amount of coagulable proteid and the dried residue is carried toward the splenic flexure at which point the colon merely acts as a propulsive agent to carry the material to the larger dilated sigmoid. The characteristic feature of the distal colon, is its complete subordination to the spinal centres. Increasing distension excites a reflex through the pelvic visceral nerves and the bowel is evacuated by the rapid shortening of the distal colon due to contraction of the coccygeus and the longitudinal fibres of the gut. This impulse originates at the upper limit of antiperistalsis at the superior sigmoid flexure and spreading downward rapidly empties the entire segment. Tonus of the neuro-musculature and locally increased tonic contractions opposing internal pressure are explanatory of peristalsis. This tonic state of the colon is increased by the pelvic visceral nerves belonging to the sacral autonomic system. The loss of tonic impulses causes accumulation of faeces with weak and sluggish contractions. In many body weaknesses the depleted central nervous system fails to deliver the necessary tonic impulses which normally inaugurate peristaltic contractions. Worry and anxiety by reason of splanchnic inhibition abolish tonus. With the loss of tonus, peristalsis is lost with the production of constipation and further resulting distention and stretching which prevent normal contractions.

In many constitutional depleting illnesses, there is cloudy

swelling and degeneration of the intestinal musculature with subsequent stasis and dilatation. This muscular degeneration with overdistention must impair not only the extrinsic, co-ordinating control of the bowel but affects the efficiency of the local nervous mechanism also and if severe at all, will abolish its function entirely. In this way this flaccid, toneless tube succumbs to the weight of its increasing contents, giving way at the weakest point of its already suspended transverse arm for as Babcock has shown, the hepatic and splenic flexures are rarely misplaced. The flexures, however, become more acute, the gastro-colic omentum and mesentery become lengthened, condensed, and thickened along the lines of greatest traction. Adhesions between the arms of the colon and the surrounding viscera may develop and the intestinal tube itself may exhibit one or more diverticula.

With the institution of this torpor the normal parasitism of the intestinal bacterial flora is changed. The colon group which normally possesses latent propensities toward pathogenicity becomes virulent and sets up a series of pathological conditions far reaching in their influence. Toxic conditions arise which vary all the way from a mild indisposition to the severest type of acute intestinal obstipation.

It seems to me that the recognition of this misplacement as also the appreciation of analogous developmental and acquired disorders within the abdominal cavity, is one of the most important desiderata in the every day examination of our patients. Constipation and digestive disorders are of such common occurrence, that a majority of the men fail to appreciate their real significance and many times consider them as necessary parts of the personality of the sufferer. It is a significant fact that pretty nearly all of the civilized female population and a great part of the male population is chronically and obstinately constipated and that to-day the most astute and able men in the medical profession are at variance, and hard at work trying to find a means to overcome this condition which lies at the foundation of so many of our ills. While I realize that this misplacement may occur without presenting any symptomatology whatever, it is true, that many of our referred patients who suffered from intestinal troubles are readily relieved when once this condition is recognized.

In the congenital type it is often found as a part of a general enteroptosis. While a certain degree of visceroptosis is natural in infancy, from thirty to sixty per cent. of female children and over twenty-five per cent. of males present enteroptotic manifestations at puberty. According to Smith, it is the thin, frail girl who becomes the enteroptotic woman. Butler believes that the fundamental traits of enteroptosis may be present in childhood and that the adult form is fairly well developed at puberty in many individuals. They present at times some of the stigmata of degeneration and as Musser believes tend towards effeminacy. He characterizes them as luckless survivors of families about to become extinct. They present many of those physical infirmities indicative of the decline of their antecedents, though some may be bettered and recover by an improvement in their environment. It is probable that flatulent disturbances and increased intra-abdominal pressure are causative in early infancy. Willms believes that improper feeding is a paramount factor in its production, while Reynolds and Lovett lay much of the blame to imbalance in the erect posture. These patients are usually slender, bony, long and narrow chested with vertical lower ribs and acute epigastric angle. The thoracic abdomen is narrow and there may be marked bulging at the navel. The lack of general muscular development and the undeveloped appearance are readily appreciated. There is marked misproportion between the length and girth of the individual as is evidenced by the Becher-Lenhoff coefficient. The nervous system is unstable, there is loss of resistance to ordinary strain and general atony, neurasthenia and psycho neuroses develop in many cases. Pain in the back and loins referred pains to the skin and superficial tissues of the abdomen through the spinal segments, bearing down pains and disturbances of digestion and menstruation occur. In the acquired form we see this condition as a sequel to many of the cachetic, chlorotic and infectious diseases. Our upright position, restriction in dress, and unhygienic social necessities are predisposing factors which must be kept in mind.

Among local factors, all those conditions of the lower intestinal tract which ordinarily conduce to obstipation, chiefly rectal valve

troubles, piles, adhesions, lack of food residue and misplacements of the pelvic organs must be kept in mind.

While it would be impossible for every man to acquire the certainty and tactile dexterity in the palpation of the hollow viscera advised by Hausmann, greater care would be exercised and further training might be gained by many men in the physical examination of the abdominal contents. Except for the attention given the right iliac fossa and the exclusion of mobile kidneys few practitioners make more than a very superficial palpation of the abdomen unless some manifest mass or tumor is present. Routine outlining of the gastro intestinal tract is rare and many lesions escape notice which if found would have led to a very satisfactory solution of the case. The exact location and form of the large bowel may be ascertained in a variety of ways. Mere inspection may at times give a very accurate clue as to the situation of the colon. Due no doubt to the longitudinal musculature the normal caecum, ascending colon and descending colon can be felt as a fibrous cord somewhat thicker than a goose quill. The healthy colon is soft and usually not tender to the touch. Probably one of the best means for its delimitation is by the ortho diagraphic method. Beginning at a neutral point the lightest possible percussion, the so-called threshold percussion is made towards the viscus, a dot being made when a change in tympany is perceived. Many such dots are laid down at the margin of the colon from various angles and when a sufficient number have been posited they are connected by lines which project the outline of the organ upon the surface of the abdomen. By this means some men have found that the results of their examinations have not varied one cm from the actual positions of the viscera as shown by skia-graphs taken immediately after the application of the method.

Auscultatory and scratch percussion are exceedingly useful and should be used wherever the opportunity affords. The newer auscultatory methods for the determination of normal and pathological gurgling sounds in the intestinal tract as advocated by Glücksman will add much to the confirmation of the data already at hand. Among the mechanical methods, the rectal introduction of normal salt solution according to the method of Bell and the elicitation of splashing for the purpose

of outlining the large bowel is worthy of trial. The commonest procedure is the use of atmospheric air by means of the double bulbs.

Probably the most conclusive way of investigating the location and functional activity of the intestinal tract is by the roentgenological portrayal of opaque substances ingested or introduced as an enema. The sub nitrate, sub carbonate, oxy-chlorid of bismuth have been employed and many radiologists have used the manganate of iron. Usually two ounces of bismuth are administered in a suspension of mucilage of Acacia after the bowel has been thoroughly cleared out.

When taken by mouth, it is found that normally the bismuth reaches the caecum in about four and a half hours, the hepatic flexure in six and a half, the splenic colon in nine hours, and the sigmoid in twelve. Radiographs taken immediately after the ingestion, at six hours and again after twenty-four hours give much valuable information. At the larger clinics, as that of Dr. Cole in New York, and in many of the European centres, fifty or sixty pictures are taken of the tract at varying intervals. This method has been of inestimable service in the determination of spastic and atonic stasis and has furnished essential data relative to the normal physiology of the entire tube.

Latterly, in the clinics of Holzknecht and Rider, the fluoroscopic screen is again being used for the closer observation of these cases particularly when the patient is being examined in the upright posture. The behavior of the intestines toward different food stuffs impregnated with bismuth can then be watched throughout the entire bowel.

The varying nature of this affection and the manifold manifestations and far-reaching effects proclaim, of course, a very elastic treatment. Prophylactically, great work might be done as Ochsner has suggested in the hygiene of the child and especially for those unfortunates who have poorly developed antecedents. There should be no let up in our efforts to inculcate into these growing children those principles and habits which make for health and normal development.

In the medical treatment, and especially in the enteroptic rest, proper dietary, massage, moderate exercise are absolutely required.

TREATMENT FOR CONSTIPATION, ADVISED BY MACFARLANE.

A glass of cold water on arising

Exercises—15 minutes

Deep breathing	20-30 times
Body bending back and forwards.....	10-30 "
Body bending sideways.....	20-40 "
Body turning	8-24 "
Knee bending and stretching forwards.....	4-8 "
Body circling	8-30 "
Sawing movement	10-30 "
Body raising	4-12 "
Leg raising sideways (not for women).....	6-16 "
Hewing movement " " "	6-12 "
Throwing the arms back and forwards.....	20-60 "
Knee raising forwards.....	4-16 "
Swinging arms sideways.....	30-50 "
Trotting movement without change of base.....	100-200 "

Eat slowly and chew thoroughly

Breakfast

Fruit	Graham or bran bread with plenty of butter, honey, marmalade or jam
Oatmeal, hominy grits, cream and sugar of milk	Coffee, one glass of water
Eggs, fried or scrambled, bacon	

Luncheon

Small amount of fat meat or fish, as halibut, cod, salmon, mackerel	Glass of cider sweetened with a tablespoonful of milk-sugar or buttermilk
Green vegetables, spinach, cabbage, asparagus, onions, carrots, parsnips, turnips, tomatoes, watercress, lettuce	Raw and cooked fruits
	Graham or bran bread
	Water

Dinner

Vegetable soup	Dessert of coarse meals, fruits
Fish, meat and vegetables same as luncheon	Cider, buttermilk or light beer, water
Salads with plenty of oil, cheese	

Before Retiring

Stewed prunes, figs or other fruits	
Glass of water	

Avoid

Tea, red wine, cocoa and chocolate, starches, rice, potatoes, sago, farina and toast	
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Recipe for Bran Bread

1 cupful of bran; 3 cupfuls of entire wheat; 1 pint of sweet milk (buttermilk if preferred); 1 cupful of molasses; 1 teaspoonful of salt; 1 teaspoonful of saleratus

The wearing of a proper belt or bandage and the assumption of the Trendelenburg posture for a part of the day are indicated. In the early stage some such outline as this may prove curative.

When once the ptosis is present to any degree and especially if the motor function of the colon is much disturbed, medical treatment will do very little good, except as massage may help to retain the little tone left in the bowel wall, and the condition requires at once surgical intervention (a cecostomy may afford a ready means of flushing the tract). The main indication is the necessity of drainage, though some cases require plication and others may do well under some form of suspension. Colostomy and ileo-sigmoidostomy have been done many times, and Lane in England following the studies of Distaso in infective arthritis of intestinal origin has advocated the removal of the entire colon. While I do not believe this radical method will meet with general favor it can not be denied that the recurrences of the obstipation and the onset of acute stasis must be met by surgical measures.

Editorial

So I turned to Messer Alberto, a very grave and intelligent person, and said, "This is copied from a silver jug of such and such a weight, which I made at such and such a time for that quack Jacopo, the Carpi surgeon. He came to Rome, and stayed there six months, daubing with his unguents scores and scores of lords and unlucky gentlemen, whom he fleeced of many thousand ducats. At that time I made this vase for him, and another different one; and he paid me wretchedly for my pains. And now all those poor wretches in Rome, whom he daubed, are crippled to-day, and in very bad case. It is the greatest honor for me that my works have such fame with you rich gentlemen. But I assure you that in these past years I have made every possible effort to learn more of my art; so that I think the vase I am carrying to France is a deal more worthy of the Cardinal and the King than the one belonging to your quack."

MEMOIRS OF BENVENUTO CELLINI.



Psych-
analysis The great problem of mental disease lies in the study of what is psychologically known as the "association of ideas." The train of thought is discordant or fragmentary and the patient's words or acts

reveal only part of what is taking place in his mind or are actually misleading. To the skilled observer much may be learned from an attitude, action or phrase, which to another would have little significance. Absolute silence associated with a furtive glance or a turn of the head often indicates disturbances of the special senses, and sudden explosions of violence follow aural hallucinations of a threatening character. Apparently casual or incidental remarks point to a fixed undercurrent of thought or hidden purpose, the revelation of which may determine the character of the mental processes. It is perhaps needless to say that the "associations" of these fragments are of the greatest therapeutic importance. The construction of the complete fabric from its isolated and disconnected parts is at once one of the most difficult and at the same time one of the most essential duties of the physician.

To the elaboration of these various series of associations the German alienist Freud and his disciples have given much thought during the last few years, and his work, by reason of its novelty, its thoroughness and its independence of all precedents, has attracted world-wide attention. A thorough exposition for Americans is given by Dr. A. A. Brill, one of Freud's pupils, in a new work entitled "*Psychanalysis*.¹" The classes of cases for whom this system is practicable, include broadly, psychasthenics, neurasthenics, hysterics and certain paranoiacs. They are not at all in the common sense of the word insane, and yet they are dominated by morbid ideas: fears, obsessions, impulses, delusions. These traits represent only part of the operations of the mind, and are the expression of the effect of some subconscious activity, of which the victim is not cognizant, or, if partially cognizant, resists. The psychanalyzer seeks the repressed activity from some suggestion conveyed by the visible evidence. Social usages demand a certain degree of self-abnegation which represents the concessions of personality to the comfort of others. Men are thus not what they seem. Freud recognizes a class of neuro-pathic individuals in whom this self-repression acts banefully. An admirer of Dickens has attributed the vigor of his characters

Psychanalysis: Its Theories and Practical Application. By A. A. BRILL, Ph. B., M. D. Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neurology at Columbia University Medical School; formerly Assistant Physician to Central Islip State Hospital, and to the Clinic of Psychiatry, Zurich, Philadelphia and London: W. B. Saunders Company, 1913.

to the fact that the veneering required by society has been omitted, and that each represents some primal human attribute. Longfellow said, "Dickens is always prodigal and ample, but what a lot of villains he introduces." And so with the Freudians. Seeking beneath the visible manifestations they lay bare the souls of their patients, and a most unpalatable presentation of human nature is the result. The method by which this is attained is the analysis of dreams, for in these, they allege, are the suppressed experiences of a life-time revealed. To the amateur observer the results are astounding. The dreams are apparently disconnected and fantastic, but the difficulty is overcome by interpretation by symbolism. The evolution of the symbolism is remarkable, and leads eventually to the exposure of a life-time of sexual repression. From this develops the anxiety, phobia, delusion, or whatever it may be. The beneficial effect of this diagnostic analysis is not quite clear; but cures are reported. It would seem that the free interchange of thought with the physician relieves the tension and the burden. Hunger and love are the primal instincts of the animal creation, the first for preservation, the latter for perpetuation. If these passions are the controlling influence, then the supremacy of man and the uplift of civilization may well be questioned. That there are degenerates of the bestial type as pictured by Lombroso, Krafft-Ebing, Havelock Ellis and Freud cannot be questioned. But we may well hope they may be found in a very small minority. That the success of neurologists depend upon the revelation of morbid sexual life, Heaven forbid! Let them pray for patients whose disorder arises from some other calamity of life than perversion of natural instincts, even though they accept the old maid, who, on determined inquisition, was brought to acknowledge that she thought she had once had a sexual feeling!

Dr. Brill's book appears to be a fair presentation of the subject. It is well written and reveals the classical scholar. It will promote in America the investigation of Freud's theories. The way is long and the obstacles are many. It will not appeal to those who carry into their ministry among the suffering, Milton's "faith in all things high."

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, JANUARY, 1913.

Consumption	28
Typhoid fever	1
Scarlet fever	1
Measles	1
Whooping-cough	0
Diphtheria and croup	0
Grippe	10
Diarrheal disease	2
Pneumonia	15
Broncho-pneumonia	7
Bright's disease	14
Apoplexy	15
Cancer	10
Accidents and violence	7
Deaths over 70 years	50
Deaths under 1 year	20
Total deaths	196
Death rate	23.06
Death rate less non-residents.....	20.24

Deaths in Institutions.

	Non-Resident.	Resident.
Albany Hospital	7	7
Albany Orphan Asylum	0	0
Child's Hospital	2	1
County House	4	4
Home for the Friendless	3	0
Homeopathic Hospital	6	0
Hospital for Incurables	1	2
House of Good Shepherd	1	0
House of Shelter	2	0
Little Sisters of the Poor	0	0
Public Places	2	1
St. Margaret's House	0	0
St. Peter's Hospital	12	3
Austin Maternity Hospital	1	1
Albany Hospital, Tuberculosis Pavilion	4	3
Labor Pavilion	0	0
Lady of Angels Convent	0	0
Totals	45	22
Births	174	
Still births	11	
Premature births.....	1	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were two hundred twenty-two inspections made, of which forty-six were of old houses and one hundred seventy-six of new houses. There were sixty-eight iron drains laid, twenty-two connections to street sewers, twenty-two tile drains, two latrines, forty-nine cesspools, ninety wash basins, ninety-eight sinks, seventy-eight bath tubs, eighty-nine wash trays, one hundred twenty-nine tank closets, one shower bath. Eighty-five permits were issued, of which seventy-two were for plumbing and thirteen for building purposes. Twenty-one plans were submitted, of which five were of old buildings and sixteen of new buildings. Sixty-eight houses were tested, one with blue or red, four with peppermint and there were sixty-three water tests. Nineteen houses were examined and thirty were re-examined. Five complaints were found to be valid and fourteen without cause.

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

Typhoid fever	7
Scarlet fever	7
Diphtheria and croup	32
Chickenpox	12
Smallpox	1
Measles	196
Whooping-cough	0
Consumption	47
Total	302

Contagious Disease in Relation to Public Schools.

	Reported D. S. P.
Public School No. 6.....	I I
Public School No. 8.....	2
Public School No. 9.....	I
Public School No. 11.....	I
Public School No. 15.....	.... I
Public School No. 16.....	2
Public School No. 17.....	I
Public School No. 21.....	I
Lady of Angels.....	4
St. Patrick's School	I
Holy Cross School	I

Number of days quarantine for diphtheria:

Longest	67	Shortest	4	Average..	15 13/24
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Number of days quarantine for scarlet fever:

Longest	41	Shortest	9	Average..	21 3/4
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Fumigations:

Houses	90	Rooms	272
Cases of diphtheria reported			32
Cases of diphtheria in which antitoxin was used.....			31
Cases in which antitoxin was not used.....			1
Deaths after use of antitoxin.....			0

TUBERCULOSIS.*Bender Laboratory Report on Tuberculosis.*

Positive	16
Negative	23

Total	39
Living cases on record January 1, 1913.....	311

Cases reported during January:

By card	41
Dead cases by certificate.....	5
	—

Total	357
Dead cases previously reported.....	23
Dead cases not previously reported.....	5
Lost track of	2
Duplicates	4
Recovered	2
Removed	25
	—
	61

Living cases on record February 1, 1913.....	296
Total tuberculosis death certificates filed during January.....	28

Out of town cases dying Albany:

Albany Hospital	2
Albany Hospital Camp	3
County Hospital	2
	—

7

Net city tuberculosis deaths	21
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REPORT OF VISITING TUBERCULOSIS NURSE.

Number of new cases assigned	13
Cases remaining under supervision	28
	—

7

Total	41
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Disposition of old and new cases:

Died	6
Transferred to hospitals	5
Referred to Albany Guild Nurse.....	30
Number of visits made	201

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive	25
Initial negative	237
Release positive	26
Release negative	60
Failed	32
 Total	 380

Test of Sputum for Tuberculosis.

Initial positive	15
Initial negative	34
Failed	1
 Total	 50

BUREAU OF MARKETS.

Market inspections	115
Public market inspections	17
Fish market inspections	4
Hide house inspections	3
Packing house inspections	2
Slaughter house inspections	4
Rendering plant inspections	3

MISCELLANEOUS.

Mercantile certificates issued to children.....	14
Factory certificates issued to children	15
Children's birth records on file.....	29
Number of written complaints of nuisances.....	17
Privy vaults	1
Closets	2
Plumbing	5
Other miscellaneous complaints	9
Cases assigned to health physicians.....	85
Calls made	212
Number of dead animals removed.....	239

Medical News

Edited by Arthur J. Bedell, M. D.

THE ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING—STATISTICS FOR JANUARY, 1913.—Number of new cases, 187; classified as follows: Dispensary patients receiving home care, 11; district cases reported by health physicians, 6; charity cases reported by other physicians, 67; moderate income patients, 85; metropolitan patients, 18; old cases still under treatment, 197; total number of cases under

nursing care during month, 384. Classification of diseases for the new cases: Medical, 53; surgical, 7; gynecological, 6; obstetrical under professional care—mothers, 49; infants, 50; eye and ear, 1; skin, 1; throat and nose, 0; dental, 0; infectious diseases in the medical list, 20; infectious diseases in the surgical list, 0. Disposition: Removed to hospitals, 13; deaths, 17; discharged cured, 98; discharged improved, 24; discharged unimproved, 7; number of patients still remaining under care, 225.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 4; number of students in attendance, 7; number of nurses in attendance, 6; number of patients carried over from last month, 2; number of new patients during month, 8; number of patients discharged, 9; number of visits by head obstetrician, 2; number of visits by the attending obstetrician, 6; number of visits by students, 63; number of visits by nurses, 74; total number of visits for this department, 145.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,374; for professional supervision of convalescents, 576; total number of visits, 1,950; cases reported to the Guild by 2 health physicians and 53 other physicians; graduate nurses 9 and pupil nurses 7 on duty.

Dispensary Report.—Number of clinics held, 86; number of new patients, 125; number of old patients, 308; total number of patients treated during month, 433; classification of clinics held: Surgical, 11; nose and throat, 8; eye and ear, 16; skin and genito urinary, 7; medical, 12; lung, 11; dental, 0; nervous, 0; stomach, 0; children, 12; gynecological, 9.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—A regular meeting of the Medical Society of the County of Schenectady was held at the County Court House, on Tuesday evening, February 11, 1913, at 8 o'clock. Dr. Frank S. Hoffman read a paper on "Psychology and Therapeutics;" discussion by Dr. N. A. Pashayan and Dr. J. M. W. Scott.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—At the next meeting of the Medical Society of the State of New York, in Rochester, April 28th to May 1st, it is planned to have an exhibit of scientific interest. Doctors in this vicinity are requested to loan exhibits of this nature. Each exhibit should be marked so that those viewing it would know whence it came, and the school and year of graduation of the practitioner. Communications may be addressed to Dr. Wesley T. Mulligan, Rochester, N. Y.

FEDERATION OF STATE MEDICAL BOARDS.—The Federation of State Medical Boards held its annual meeting at the Congress Hotel, Chicago, on Tuesday, February 25, 1913.

HEALTH OFFICERS MUST REPORT COMMUNICABLE DISEASES.—General notice has been served by Commissioner Porter that health officers will be removed from office if they fail to report promptly to the department all cases of communicable disease. It is pointed out that it is the busi-

ness of local health boards to see that their health officers perform their duties but if they fail to act the health officers will be cited to show cause why they should not be removed from office.

NEW COCAINE BILL.—A bill is ready for presentation to the legislature which it is believed is drastic enough to crush the illegal traffic in cocaine in New York. It makes the illegal sale of the drug a felony with a seven-year penalty; the possession and traffic in flake cocaine are prohibited and the drug is required to be traced from the manufacturer to the druggist. The bill limits the character of prescriptions which a doctor may give and a physician is not allowed to prescribe the drug in the crystalline form. Thirty days after the passage of the act, druggists, physicians and veterinarians must keep records and when purchase sheets and sale lists fail to tally, it will be presumptive evidence of illegal sale and no drug store may have more than five ounces of the drug at one time. Every effort has been made to have the bill conform to the requirements of the legitimate drug trade. The bill has the endorsement of the New York County Medical Society.

ARMY DENTAL CORPS.—The Surgeon-General of the United States Army announces that examinations for the appointment of Acting Dental Surgeons will be held at various places on April 7, 1913. The essential requirements are that the applicant be a citizen of the United States, between twenty-one and twenty-seven years of age, a graduate of a legally authorized dental school and of good moral character and habits. Acting dental surgeons are employed under a three years' contract at the rate of \$150 a month, and at the end of this time, if qualified, are promoted to the grade of dental surgeon. All applications must be filed at least two weeks before the date set for the examination.

STATE MEDICAL LIBRARY.—Director Wyer of the New York State Library has announced that the reading room in the library which was opened to the public on January 15th, contains about 12,000 volumes available for consultation and for lending. The library receives between five and six hundred domestic and foreign medical periodicals which are on file in the reading room. The hours, at present, are from nine to six daily and on Tuesday and Thursday evenings until ten. Medical books may be borrowed for two weeks by any licensed physician in the State, full-time instructors in medical colleges, members of hospital house staffs, registered or certified nurses and other persons offering suitable credentials. When possible, the library lends its books through local libraries or schools, all transportation charges to be paid by the borrowing library or individual.

PUBLIC HEALTH COMMISSION.—The first meeting of the new public health commission of New York, recently appointed by Governor Sulzer, was held in New York City, on January 20, at the United Charities Building, when testimony as to the necessity for reform legislation and as to the present conduct of the State Health Department was heard.

It was pointed out that the present laws were inadequate in that they did not define the powers of the local health officers nor the powers of the State on matters of health, and also that the salaries paid in the department were entirely inadequate, and, especially in the smaller towns, were too small to permit the securing of properly trained men for the work. Prof. C. E. A. Winslow of the College of the City of New York stated what he considered to be necessary to effect a diminution in the death rate and Dr. Baldwin of the Commission submitted a plan for the reorganization of the State department.

FIGHTING SMALLPOX.—The State Department of Health is taking steps toward the prevention of a general epidemic of smallpox. The disease is reported as being epidemic in widely separated localities in the State. Among the places reporting cases are Whitehall, Mechanicville, Palatine Bridge, White Plains, Canajoharie, Tonawanda, Niagara Falls and Corning. The disease is usually of a very mild type.

HOSPITALS FOR INDIANS.—The Committee on Indian Affairs of the United States Senate has approved an Indian Appropriation bill providing for hospitals and other means for treating tuberculosis among the Indians. The appropriations amount to \$307,000.

MORTALITY STATISTICS FOR 1912.—The death rate of New York State for 1912 was 14.6 per 1,000, the lowest in its history. The figures show 5,000 fewer deaths than in 1911. The death rate from typhoid is the lowest on record, 52 per cent lower than the average rate prior to the year 1905. There were 600 fewer deaths from tuberculosis than in 1911, and a smaller number of deaths than in any of the eight preceding years. A new record was also made for diphtheria, there being 250 fewer deaths from this disease than in 1911. It is believed that this is due to the more general use of the antitoxin furnished by the State. The cancer death rate increased. The urban mortality from tuberculosis was 15.2 and the rural mortality from tuberculosis was 11.3 per 100,000 population. Infantile paralysis caused nearly 200 deaths during the year.

PURE WATER ON TRAINS.—The Treasury Department issued from Washington on January 29, regulations prohibiting the supplying of any but "certified pure" water on trains and steamboats in interstate commerce. The regulations require further than all water containers be scalded at least once a week and that any ice used in cooling the water must also be "certified pure." The requirements of individual drinking cups on common carriers engaged in interstate commerce was made by the Public Health Service some time ago.

ASSISTANT IN EXPERIMENTAL THERAPEUTICS (MALE).—The United States Civil Service Commission announces an open competitive examination for assistant in experimental therapeutics, Philippine Service, for men only. From the register of eligibles resulting from this examination

certification will be made to fill a vacancy in the position of research assistant in experimental therapeutics in the Bureau of Science, in Manila, Philippine Islands, at a salary of \$2,000 a year, and vacancies as they may occur requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

This position offers to the ambitious and capable physician a wide field for experimental therapeutics work. The Bureau of Science possesses one of the largest and most favorably known research laboratories in existence and is in the immediate vicinity of the Philippine General Hospital, which is probably the best institution of its kind in the Eastern Hemisphere. In view of the excellent opportunities presented qualified persons are urged to enter this examination.

It will not be necessary for applicants to appear at any place for examination. Their eligibility will be determined upon the evidence furnished in connection with application and examination Form B. I. A. 2, concerning their training and the work which they have accomplished.

Applicants must be graduates in medicine, and in addition must show at least one year's postgraduate experience in conducting laboratory research work in experimental therapeutics, or, as equivalent to the year's work, they may submit copies of publications prepared by them, evidencing their ability to carry on original experimental therapeutics work. A person is desired who is especially qualified in research, and it is stated that, for one who is satisfactory, the prospects of promotion are excellent.

Statements as to training, experience, and fitness are accepted subject to verification.

Applicants must have reached their eighteenth but not their fortieth birthday on the date of the examination.

The medical certificate on Form B. I. A. 2 must be executed by some medical officer in the service of the United States. Applicants should appear before medical officers of the Army, Navy, Indian, or Public Health and Marine-Hospital service. If such officer can not be conveniently visited, a pension-examining surgeon may execute the certificate. Special arrangements have been made with pension-examining boards throughout the country to give such examination for a fee of \$2, to be paid by the applicant. This certificate must not be executed by the family physician of the applicant. The medical officer should indicate his rank or official designation on such certificate. When it is impracticable, by reason of the applicant's distance from a Government physician or a pension-examining surgeon, to have the medical certificate executed by such physician, it may be executed by any reputable physician. Such person may be required to undergo another examination in case of appointment.

Each applicant will be required to submit with his application a photograph of himself, taken within three years, which will be filed with his papers as a means of identification. An unmounted photograph is pre-

ferred. The name and date of examination, the competitor's name, and the year in which the photograph was taken should be indicated.

This examination is open to all male citizens of the United States who comply with the requirements.

Special attention is invited to the favorable conditions in respect to transportation, leave of absence, clothing, etc., in this service, printed hereon.

Persons who comply with the requirements and desire this examination should at once apply for Form B. I. A. 2 to the United States Civil Service Commission, Washington, D. C.; the secretary of the board of examiners, post-office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; custom-house, New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; old custom-house, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington prior to the hour of closing business on March 10, 1913. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

PERSONALS.—Dr. ARTHUR J. CAPRON (A. M. C. '94) has purchased Glenmary Sanitarium at Owego, Tioga County, N. Y.

—Dr. FREDERICK D. BRANCH (A. M. C. '99) is now at 86 Front Street, Binghamton, N. Y.

—Dr. CHARLES S. ALLEN (A. M. C. '07) is now at 301 McCarthy Building, Boise, Idaho.

—Dr. SAMUEL P. BRUSH (A. M. C. '08) is now at 1 Ray Street, Jamaica, New York City.

—Dr. ARTHUR E. WELLS (A. M. C. '11) has started practice at 16 Swan Street, Schenectady, N. Y., and will specialize in obstetrics.

—Dr. CHARLES EDWARD MAXWELL (A. M. C. '11) is at Portlandville, Otsego County, N. Y.

MARRIED.—Dr. JOHN I. COTTER (A. M. C. '04) of Campbell Hall, N. Y., and Miss Fannie Penoyes of Chester, N. Y., at Stamford, Conn., on December 17, 1912.

—Dr. MARCUS D. CRONIN (A. M. C. '07) of Albany, N. Y., and Miss Helen M. Doyle, on February 1, 1913.

DIED.—Dr. ANDREW TRUAX VREDER (A. M. C. '63), formerly of Schenectady, N. Y.; a retired practitioner of Pittsburgh, Pa., died at his home January 4, aged 70.

In Memoriam

CHARLES S. HAZELTINE, M. D.

Dr. CHARLES S. HAZELTINE, of the Class of 1866 of the Albany Medical College, died at his home in Grand Rapids, Mich., on December 17, 1912.

Dr. Hazeltine was born in Jamestown, N. Y., October 1, 1844. After graduating from Albany he went to New York City for post-graduate work, and spent the following winter in the Lying-In Hospital at Buffalo, N. Y. He then practiced for a short time at Jamestown, N. Y., and afterward established a retail drug house. In 1874 he removed to Grand Rapids and established a wholesale drug business, which afterwards developed large proportions and became the Hazeltine and Perkins Drug Company. This was the first wholesale drug house in western Michigan. Dr. Hazeltine was appointed in 1893, by President Cleveland, United States Consul to Milan, serving in that capacity for two years. He became a prominent citizen in Grand Rapids and was vice-president of the National Bank. The immediate cause of his death was uræmic poisoning. He had suffered for years from Bright's disease, and had visited famous cures in Europe seeking relief. Dr. Hazeltine married Miss Anna Fox of Chelsea, Mass., in 1875. Mrs. Hazeltine and four children survive.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Manuel Pratique de Kinésithérapie. Fascicule iii—G. ROSENTHAL, Maladies respiratoires (méthode de l'exercice physiologique de la respiration). Fascicule iv—RÉNE MESNARD, Orthopédie. Fascicule v—F. WETTERWALD, Maladies de la nutrition; RAOUL LEROY, Maladies de la peau. Librairie Félix Alcan, Paris, 1912.

In the first of these three volumes, the physiologic utilization of respiration in the treatment of diseases of the respiratory tract is very completely and carefully discussed. The first chapters are devoted to the study of the various types and normal characteristics of respiration, to the important rôle played by a healthy state of the upper air-passages, and to the influence exerted by the accessory muscles of respiration as well as by the varying attitudes of the trunk. The author then describes very fully the various forms of respiratory gymnastics which this particular field of kinesitherapy embraces, discusses the merits of certain associated manœuvres, as well as the physiology of, and the indications for, each exercise or series of exercises.

Rosenthal exposes in detail the specific principles underlying the treatment of individual diseases and pays particular attention to the different stages of pulmonary tuberculosis. In his opinion, the respiratory move-

ments may be so regulated and modified, in cases of hemoptysis, as to exert a restrictive influence and even prove sufficient to arrest or at least materially limit, the bleeding. Respiratory gymnastics yield particularly excellent results when applied to the reeducation of naso-pharyngeal breathing in individuals who have been relieved of adenoid vegetations. Another class of individuals who are much benefited by the treatment are those in whom mouth-breathing simply represents a manifestation of defective adaptation or of neglected education. The habit most frequently occurs in subjects of a neuropathic predisposition and has been termed by Lermoyez "respiratory aboulia." Respiratory kinesitherapy is likewise capable of rendering great services in certain forms of spinal rigidity and vertebral deviation, and particularly so in scoliosis. Among the many other affections which Rosenthal regards as amenable to this mode of treatment, the following deserve especial mention: recurrent bronchitis of childhood, asthma and emphysema, acute and chronic forms of pleurisy. The author even claims decided benefit from respiratory gymnastics in deaf-mutism, stuttering, cardiac and hepatic affections, intercostal neuralgia, whooping cough and constipation.

The second volume deals with the exhibition of kinesitherapy in the domain of orthopedics. The plan of treatment such as outlined by Mesnard comprises two distinct series of exercises:

1. Passive manœuvres: massage, vibration, passive movements, mobilization;
2. Active manœuvres: attitudes necessitating static muscular contraction, active and free movements proper.

While the author does not maintain that these kinesitherapeutic measures prove successful in all types of orthopedic lesion, he does claim remarkable results in many of them. The condition most favorably influenced, and that which affords the most striking evidence of the value of this form of treatment, is scoliosis. The element of stability or instability of equilibrium in such cases, however, is a factor of considerable moment in determining the choice of manipulations. This particular chapter is treated by Mesnard with especial care and appropriate regulations are furnished for the different types of scoliosis. In kyphosis and lordosis exercises bringing into play the abdominal musculature are particularly valuable. The active movements recommended are those which favor the gradual correction of the vicious attitude. Séances of cervical and cervico-axillary suspension, passive manipulations with or without resistance, massage, and mechanical appliances also have their indications.

In the first stages of flat-foot, when local pain and discomfort constitute practically the entire symptomatology, absolute rest during a few days frequently suffices to allay the pain and restore perfectly normal conditions. Aside from this, massage of the muscular and ligamentous structures will do much towards relieving the local fatigue and strengthening the musculature. Landerer recommends that massage be applied mainly to the muscular groups of the leg. Of the various active exer-

cises, standing on tip-toe, with or without associated flexion of the knees, renders by far the greatest services.

Of other orthopedic affections in which appreciable benefit may be derived from kinesitherapy, the following are the most important: rachitic deformities of childhood, congenital club-foot and dislocation of the hip, congenital torticollis, infantile paralysis and spastic diplegia. In regard to the tuberculous lesions of bones and joints, the author observes the greatest discretion and practically dismisses all forms of kinesitherapy during the acute manifestations, particularly so in coxalgia. The later and chronic stages of the tuberculous arthritides, however, he classes among the conditions most remarkably benefited by appropriate massage and gymnastics.

The third volume comprises two sections; one deals with the employment of kinesitherapy in the various types of nutritional disorder, the other with its utilization in certain forms of cutaneous lesion.

In the first part, the opening chapter is devoted to the physiology of nutrition and to a résumé of the current views on metabolism and nutritional equilibrium. Wetterwald classifies as follows the various conditions which may be regarded as manifestations of disordered metabolism:

- (a) Systemic dystrophies: obesity, gout, diabetes, etc.;
- (b) Neuralgia and other analogous types of pain (myalgia, arthralgia, etc.);
- (c) Neuroses: chorea, paralysis agitans, neurasthenia, hysteria, epilepsy, tics, migraine, professional cramps;
- (d) Certain affections of the organs of the special senses.

The general plan of treatment formulated by the author comprises the following measures:

- (1) Local treatment of certain forms of cellulitis which may be present (œdema, infiltrations, sclerotic nodules), by means of hydrotherapy, electricity, heat, etc.;
- (2) Passive gymnastics, including Swedish movement and the various forms of massage;
- (3) Active movements, to which a varying degree of resistance is opposed by a trained attendant or by the physician;
- (4) Active and free movements, such as are realized in the various games and sports.

Wetterwald exposes in detail the specific measures applicable to each individual manifestation, and claims particularly brilliant results in the various forms of neuralgia and in certain neuroses. The benefit derived from kinesitherapy in some of the other affections, while less remarkable and constant, is nevertheless more than sufficient to warrant the utilization of this mode of treatment.

In the second part of this volume, Leroy discusses the many advantages of kinesitherapy in certain types of skin lesion. Plastic massage represents the main form of treatment employed. The author describes very fully the various features which characterize a proper technique and gives special instructions for the treatment of the different forms of

disease. The conditions which respond most favorably to this therapeutic measure are: acne, certain forms of eczema, erythema, frost-bites, varicose ulcers, chronic oedema, cicatrices, alopecia areata, and the various types of melanoderma.

LA SALLE ARCHAMBAULT.

Practice of Urology—Surgical Treatise on Genito-Urinary Diseases, including Syphilis. By CHAS. H. CHETWOOD, M. D. LL. D., Professor of Genito-Urinary Surgery, New York Polyclinic, etc. Published by Wm. Wood & COMPANY, 1913.

This volume will be of exceeding great use for students in many of its chapters, and of great value as a reference book to practitioners in general through its comprehensive dealing with the minute technique of the various treatments and operations covering this special line of work. The author has shown excellent taste in the curtailment of verbosity while paying special attention to the latest measures of treatment, a factor now of extreme importance since diagnosis and treatment are undergoing such rapid changes in these days.

Especially are the chapters on Sero-diagnosis and Sero-Therapy and Functional renal diagnosis and radiography with the accompanying excellent skiagraphs to be commended to those students who intend taking up this form of practice as a specialty, and the chapters on the kidney in all the aspects of disease and treatment, should be perused by medical and surgical men in order to refresh the memory.

J. N. V.

A Text-Book of Gynecology. By WILLIAM SISSON GARDNER, M. D., Professor of Gynecology, College of Physicians and Surgeons, Baltimore, Md. D. Appleton and Company, New York and London, 1912.

This small text-book of gynecology has been prepared especially for the use of medical students. The author states in his preface that in preparing this volume the limited time of the overcrowded medical student has been taken into consideration. The subject is covered in twenty-two brief and well-arranged chapters. There are 138 illustrations, many of which are of gross pathological specimens; several point out the various steps in important gynecological operations, and there are 42 plates of photomicrographs. The book seems to meet the purpose for which it is intended, and should prove of value especially to medical students as a preliminary insight into this important branch of surgery.

T. L.

PSYCHIATRY

Edited by G. Alder Blumer, M. D.

*Concerning the Influence of Fever on the Course of Mental Disorders
(Ueber den Einfluss des Fiebers auf den Verlauf von Geisteskrankheiten).*

HARALD SIEBERT. *St. Petersburger medizinische Wochenschrift, Jahr. XXXVI, No. 40, October 14, 1911.*

That febrile diseases, especially those associated with suppuration, have had a favorable influence upon the course of mental diseases and have even promoted recovery, has been known since the time of Galen. In modern medicine some definite statements of this peculiar relationship were made by Dubuisson as far back as 1816, and Esquirol in 1828 included a reference to the fact in his text-book of mental diseases. The production of artificial fever in mental diseases was proposed and carried out by the use of moxa and other vesicants, and even calomel was used for this purpose.

In 1877 Ludwig Meyer attacked general paralysis by artificial inflammation of the scalp with tartrate of antimony, and published some beneficial results. These were questioned at the time because of the universal acceptance of general paralysis as a necessarily fatal disease.

In 1884 Rath had opportunity to observe the effect of typhoid fever during an epidemic in an institution for the insane in mental disorders of all kinds, and noted that twenty-one per cent. of the patients attacked recovered health, forty-three per cent. improved, twenty-nine per cent. remained stationary and eight per cent. died. Other observations have included erysipelas, hemorrhages of the stomach, various suppurative processes, scarlet fever, diphtheria and influenza, all of which have been followed by a change for the better in the mental state of the patients.

The whole question was investigated in 1887 by Wagner, who established a counter irritation by the use of Koch's old tuberculin. Sodium nucleinate and peptone have also been used for the same purpose, but the pathological results, no matter what the remedy, are probably to be attributed to the production of leukocytosis, and to this is attributed the mental effects.

A large amount of work upon general paralysis has been done by different authors, and the general results appear to justify the belief that these artificial fevers have been followed by a mitigation of the symptoms. A reasonable doubt, of course, may be felt because the disease is not infrequently interrupted in its progress by remissions, which may be so pronounced as to justify the belief of a recovery, at least temporarily.

Pilcz has reported a number of cases observed side by side with control cases, and those who were subjected to the tuberculin treatment give a less severe course of the disease.

Siebert reports a limited number of patients, including several cases of general paralysis, three cases of early primary dementia, and five of maniacal type. He believes that the cases of general paralysis treated with tuberculin run a less severe course, and a favorable influence was observed in the other patients.

Summarizing the literature and his own experience, he states the following conclusions:

1. Cases of general paralysis, especially those in the initial stage, are favorably influenced by the production of artificial fever, especially that following the use of tuberculin, in that the disease presents pronounced remissions and may even become stationary.
 2. Under certain conditions, an incidental suppurative process in the course of a psychosis may induce a favorable outcome of the affection.
 3. The recuperative results in psychoses established by artificial or natural fever, are to be attributed to the leukocytosis associated with the fever process.
 4. Observations upon the effect of fever upon simple mental disturbances show that those psychoses accompanied with great motor restlessness are definitely influenced.
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Clinical Observations on Korsakow's Symptom-Complex (Klinische Beobachtungen des Korsakows'chen Symptomen-komplexes).

JOSEF ROLLMAN. *Wiener klinische Rundschau*, Nr. 41, October 8, 1911.

This disease appears in the greater number of cases in alcoholics, but literature has brought to light a great number of other causes, among which are chemical poisons, arsenic, nicotine, infectious diseases, as typhoid, influenza, syphilis, leukæmia, malaria, diseases of the liver and of other organs, as well as relatively frequent puerperal affections; it occurs also in progressive paralysis, senile dementia, injuries of the skull, brain tumors, syphilis of the nervous system, suicidal attempts by hanging, and it is also seen after apoplexy. In the face of this great variety of causes, a toxic origin is generally accepted, and this is in line with the fact that alcoholic neuritis is the type of an affection of this kind.

The first cases of the disease all show multiple neuritis with numbness and tingling of the lower extremities, paresis, atrophy of the muscles, electrical changes of the nerve trunks and muscles, diminution or absence of tendon reflexes, associated with gastric or constitutional symptoms. Korsakow himself found occasional cases in which there was some doubt as to the presence of neuritis, and in these the attack almost always began with delirium or pronounced stupor. The patients are entirely disoriented as to place and time, and have little capacity for receiving mental impressions of the present, although they are clear in their memories of the past. This mental characteristic is common in organic diseases of the brain, especially in senile changes and may progress to an extreme degree. The inability to receive recent impressions is due to pronounced disturbance of the faculty of attention, for the patient is often able to understand what he says but forgets quickly, and by associating numerous events of his life without reference to the elements of time and space develops the pseudo-reminiscences as a species of deceptive recollections. Memories thus accumulate which take the form of pictures in his mind, in part resembling dreams, and in part influenced by hallucinations, so

that they become fantastic and reveal the loosely connected states of confabulation. The condition of the patient is generally restful and happy, although the disturbances of sensibility are quite distinct, especially in the function of sight and the stereoscopic sense. These suggest focal lesions of the brain, either of the optic or of the motor centers, and certain palsies of the eye muscles point to bulbar lesions. The occasional invasion of the vague and phrenic nuclei leads to sudden death in the acute stage, although generally the prognosis as to life is relatively good. The outcome as to the mental state is not entirely favorable as a permanent enfeeblement is apt to result, which is difficult to differentiate sometimes from general paresis, and occasionally a condition resembling paranoia follows. If we accept the theory of Korsakow, Lapinsky and others that the cause of this disease is an agent working in one case upon the peripheral nervous system and in another upon the central nervous system, it is easy to understand that neuritis is not an essential accompaniment.

Redlich has grouped the cases in three varieties: first, pure polyneuritis; second, polyneuritis associated with almost any variety of psychosis; and, third, a pure psychosis.

The general prognosis depends, in great measure, upon the etiology; for cases of irreparable disorders of the brain, as, for instance, senile dementia, the outlook is decidedly bad. In alcoholic cases, the prognosis is doubtful, although improvement and even recovery may take place, and so in syphilis response to treatment may be favorable. This conclusion is worthy of note as so many writers assume an unfavorable termination.

Contribution to the Study of Presenile Insanity (Beitrag zur Kenntnis des präsenilen Irreseins).

ALBERTO ZIVERI. *Zeitschrift für die gesamte Neurologie und Psychiatrie, Originalien, Band 8, Heft 3, 1912.*

The author discusses the term "amentia" which is used in a different sense in Europe than in the United States, as it is entirely independent there of any distinct congenital defect and implies an acute mental disorder allied with acute stupor or acute delirium as understood here. Kræpelin, for instance, recognizes four groups of acute toxic and infectious disorders, as fever delirium, infection delirium, amentia and post-infectious conditions.

Ziveri discusses another type of disorder which occurs almost always in women between the fortieth and sixtieth years of life. This condition begins with a depressive state, which later shows such peculiarities as to entitle it to be separated as a distinct form of mental disease. He believes it is a presenile disorder, and describes a case with the histological study in detail.

The patient, a woman of fifty-seven years, became melancholy, and after four months her condition changed and she became excitable with

garrulous speech, distracted manner, failure of attention, practically no defect of consciousness and without perceptible disturbance of the sensorium. Mental confusion developed with refusal of food, loss of sleep, and wasting of physical strength, confabulation, muttering delirium, and attacks of violent excitement. Loss of consciousness, subsultus, progressive deterioration with decubitus followed, and proceeded finally to a fatal termination without fever or any symptoms of urinary or other visceral disorder. The autopsy showed nothing of note except slight oedema of the brain and congestion of the cerebral vessels. Histologically there were no definite lesions to account for the severity of the attack and the death of the patient. The central nervous system showed wide-spread, moderately severe changes in the nervous tissues, above all fatty degeneration of the greater part of the nerve cells, with a simple and fatty sclerosis in the cells of the superficial layers; nuclear and vacuolar degeneration of the protoplasm in the various stages up to the point of complete destruction, and also rarefaction intermingling and conglutination of the fibrillary structures. On the part of the nerve cells there were various increases of the nuclei, marked increase of the fibrils, and pronounced increase of the perivascular astrocytes, particularly in the white substance. The blood vessels showed numerical increase with degenerative changes of the different elements of the vascular walls. There was also hyperplasia of the connective tissue elements of the adventitia.

Ziveri calls attention to the study of involution processes by Kræpelin, Thalbitzer and Alzheimer and finds in his own observations this certain peculiar group occurring in women in the presenile period. The disease begins with a subacute depressive state of neurasthenic character. The patient is anxious and suicidal. There are no outspoken hallucinations. After a short time the patient becomes restless and confused, and disposed to repeat the same phrases. After a variable period she is apt to develop suddenly a state of great excitement. The anxiety fades into the background and she becomes then apathetic and disposed to a number of unnecessary automatic movements. The expression of the face is lost, sometimes there is silly laughter, though without any definite purpose, the attacks of excitability occur from time to time, and sleep and nutrition vary, loss of bodily weight follows quickly. The result in some cases is fortunate as to life, although the patient remains dull and incapacitated to undertake any responsibility, though she may return to her family in a weakened state of mind. In three cases there was a fatal issue, in two from complications and in the third from increasing marasmus and failure of the heart. Alzheimer found in all of these cases an identical condition of the brain, characterized by widespread changes in the cortex, the development of Nissl changes in the cells and other cellular destruction, together with proliferation of the glia cells, an excess of connective tissue in the vessels and increase in the cells of the adventitia.

Familial Von Recklinghausen's Disease.

J. D. ROLLESTON and N. S. MACNAUGHTAN. *Review of Neurology and Psychiatry*, Vol. X, No. 1, January, 1912.

Von Recklinghausen called attention to the occurrence in families of the disease which bears his name, and it is now decided that generalized neurofibromatosis is always congenital, often hereditary and sometimes familial.

The writers observed a girl of thirteen years who was admitted to the Grove Fever Hospital in London, November 12, 1910, with mild diphtheria. A nævoid growth was noted on the right half of the upper lip, and on further examination of the cutaneous surface three varieties of lesions were met: 1st, punctated pigmented spots; 2nd, *café-au-lait* patches; 3rd, blue spots, that is, the first stage of molluscous tumors. The pigment spots and the larger *café-au-lait* patches were scattered over the neck, trunk, arms and thighs. Their distribution was for the most part irregular, but in at least two places there was a suggestion of the zosteriform arrangement to which Feindel has drawn attention. The blue spots, which were less numerous, were found on the trunk and thighs, and one was seen on the left upper arm. The heart and lungs were normal; von Pirquet's reaction was negative. Beyond slight scoliosis there was no skeletal deformity. The intelligence was above the average; she had won several prizes at school. Her stay in the hospital was uneventful, apart from a bout of vomiting which occurred on 16th December, when a previous history of similar attacks occurring about every two months was obtained. She was discharged in good health on 24th December, when it was noted that the blue spots had increased in number and size since admission.

A sister who was admitted to the hospital at about the same time presented a similar although not identical series of lesions. The father was then called, and it was found that the body was thickly set with molluscous tumors, mostly sessile, in all stages of development. The skin of the abdomen and inner side of the thighs showed a yellowish ground-work with pigmentation, with pigmented spots and *café-au-lait* patches.

Two other children showed a yellowish tinge of skin, but no molluscum or pigmentation.

The grandfather had numerous small nævi on the trunk, and the grandmother had some nævi on the trunk and a large area of pigmentation in the lumbo-sacral region. Both showed a slight yellowish tinge of the skin.

The cases raised the question of the existence of a variety of Von Recklinghausen's disease in which the nerves are not involved, and in these cases it would appear that the lesion was a pigmentary dermosfibromatosis rather than neuro-fibromatosis. It is evident that there may be different varieties of the disease, especially incomplete forms. Attention is called to the occurrence of bilious attacks in the father and child. Gastric disturbance has been noted in Von Recklinghausen's disease, and reference is made to a case reported by Dr. Parkes Weber in which familial vomiting occurred.

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

The Present Position of the Question Regarding "Trachoma Bodies."

R. GREEFF (Berlin). *The Ophthalmoscope* (London), November, 1911.

About four years have elapsed since peculiar discoveries, as to trachoma, were made by Halberstaedter and Prowazek, in Java, and, soon afterward, by the author, and those working with him, in Germany. Von Halberstaedter and von Prowazek called the newly discovered bodies Chlamydozoa and the author gave them the name of diplo-granules, on account of their tendency to lie side by side. Later, wanting to make their name an indifferent and non-committal one, Greeff entitled them "trachoma bodies." This non-committal spirit seems practically necessitated by the imperfection of anybody's knowledge of the granules in question, though, despite a seeming lull in the pertinent literature, information about them is declared by the author to be decidedly increasing.

The first question is as to whether they are accurately, morphologically differentiated, so that they can surely be distinguished. Greeff thinks that it must be answered negatively. Their well-known cap-form can readily be made a means of their detection in the epithelium, especially since Lindner's differentiating method has broadened the scope of research so satisfactorily. But examination cannot be confined to mere form. To investigate the initial form of the focus or detect it outside the epithelium, abounds in difficulties. Although the corpuscles are widely spread all through the tissues, between the cells and in the lymphocytes, it is hard to find characteristic forms and definitely decide if they really are trachoma bodies.

Certainly not all the structures that have been described as trachoma bodies are of similar nature.

Again, Junius is right in saying that not everything that has been figured as epithelium with trachoma bodies, is even epithelium. Heymann, for instance, pointed out, at the International Congress, at Budapest, in 1909, that Herzog's discoveries, among others, did not really belong in this class. Flemming distinguishes four different types that have been put forward, in literature, as all belonging to this group. Junius pictures much that certainly belongs in it; much that equally certainly does not, and also much concerning which Greeff declares himself unable to decide, as to whether it rightfully belongs or not.

We are, as yet, cognizant of a few typical appearances, which, however, nobody can circumscribe with concise, scientific boundaries.

A scientific discussion, as to what concerns the question and what does not, must fail for want of evidence. Improvement in the *technique* of microscopic staining and more accurate differentiation from other corpuscles must ensue before a strict separation can be effected.

The second question is as to where and in what diseases trachoma bodies have been discovered. The chief investigators have not found them in simple conjunctival catarrh but have seen them, in an early stage, in a normal conjunctiva. Henford figured this latter in 1909,

but little importance attaches to the discovery, since it has not been repeated and we hardly know what is normal in the conjunctiva. Greeff differs with Antonelli, Jr., who holds that trachoma bodies are often to be found in the normal conjunctiva of man and apes. Greeff thinks Antonelli, Jr., was led to err, as to this, by his lack of experience, in his early work, and that he described much that is foreign to the condition under discussion.

Four noted investigators have found typical corpuscles in cases of blennorrhœa neonatorum. Flemming showed that there are not some cases of blennorrhœa neonatorum with gonococci and other cases with trachoma caps, but that the latter are present in one and the same preparation with the gonococci and that this is often seen. This fact cannot be too greatly emphasized. Prowazek and Halberstædter took another step when they found chalmydozoa in the vagina of the mother of a child suffering with blennorrhœa. Trachoma bodies can be found on the genitals of persons of either sex who have gonorrhœa. There are not two separate diseases, one with gonococci and the other with cell inclusions, that may be called, respectively, trachoma of the newly born and trachoma of the genitals. Greef discusses this point *in extenso* and gives a table, drawn up by Flemming, which describes one case as typical of many.

No fact entitles us to escape the dilemma by the invention of a new disease—"inclusion blennorrhœa."

The first clinical symptom in an epidemic disease of swine is a reddening of the eyes and discharge from them. In these cases typical trachoma bodies, in cap form, are present and in all possible phases.

Trachoma bodies are so similar to granules that Lippenschuetz first found in molluscum contagiosum that they stand or fall together; yet, although they belong in the same category, they are not identical. The same is true of Hoefer's inclusion bodies, found in scarlatina.

The third important question is: What is the significance of these structures? It has even been attempted to unify trachoma and gonorrhœa. This is not possible. Not everything, in which trachoma bodies can be found, is trachoma. Gonorrhœa is essentially a disease of large towns, while trachoma is especially one of low-lying, country districts. Certain places in East Prussia are nearly free from gonorrhœa, while trachoma is very prevalent in them. Inoculation experiments have likewise failed to convince Dr. Greeff of the identity of these maladies. He will not say whether or not we are dealing with a cell-degeneration, when considering trachoma bodies. No independent increase or essential growth of them has ever been seen. They can neither be isolated, cultivated or inoculated in pure culture. He says that his own answer as to their significance is: "I don't know!" He says that it is not the task of natural science to explain and clear up everything at once, but rather to collect facts. He is not pessimistic but thinks progress has been made and hopes for a solution of the problem furnished by the structures considered in this article.

On Ocular Palsies, Occurring as the Sole or Most Conspicuous Objective Evidence of Disease.

C. O. HAWTHORNE, Glasgow. *The Ophthalmoscope (London)*, November, 1911.

There are many evidences and symptoms of disease to which their victims will submit without taking pains to consult a physician or use any other means of learning what is their cause. Ocular paralyses are not likely to be among symptoms so neglected. They so discommode or alarm sufferers from them that they are apt to be brought early to medical observation. Hence the abundant opportunity for studying their clinical associations and developments. But their study is not devoid of difficulty. One of the chief reasons for this is that the ocular paralysis is so often seen as an isolated event, having, that is, no clinical associations. On the other hand, there are very many instances of an ocular paralysis being merely the herald of a series of pathologic events dependent on progressive and serious disease of the central nervous system. Hence in any case of such paralysis, in which it is the marked and only symptom, the question naturally arises: Is this a purely localized condition, having no general significance or is it the initial token of widespread, degenerative, nervous disease? If there were any simple method of answering this question satisfactorily, in each case, the uncertainty and difficulty of attendant prognosis would disappear. Unhappily, no such method of escape exists. Probability there may be, but certainty, is lacking. The lapse of time is requisite to a decision if the paralysis is a mere isolated event in the patient's clinical history or if it was the forerunner of more serious affections. It won't do to accord a case of ocular paralysis a cursory glance and dismiss it with a prescription of the iodid. The patient, annoyed by a recent diplopia, is apt to consider it merely a transient and unimportant, localized affection of the eyes. Such a case really demands as careful an examination of the entire nervous system and even of the other systems, as would one of hemiplegia, muscular atrophy or wristdrop. The question then arises if a case of ocular paralysis can ever be "simple," in the sense of being non-indicative of serious, organic, nervous disease. While most experienced observers would be apt to answer this question in the affirmative, actual demonstration, in any individual case, is, in the very nature of things, impossible. Good clinical arguments, however, seem to support the thesis.

Other peripheral nerves, notably the facial, are occasionally damaged by some influence which seems to exert merely a local action and which, for want of a better name, is usually termed "rheumatism" or "cold." Sometimes such affections persist, in other cases they are of but temporary duration. If this be true of the seventh cranial nerve, it must be quite as true of the third, fourth or sixth. Victims of ocular paralyses have recovered and lived years afterward without a recurrence of such affections or having other nervous disorders. An ocular and facial paralysis have occurred at the same time, though this is exceptional;

and they have developed and improved simultaneously. If the absence of syphilis can be guaranteed, if no other signs of nervous disease appear and the patient is somewhat definitely "rheumatic" (whatever that may mean) the circumstances warrant, if any could, the calling of the case a "simple" one. This need not mean that the malady is to be of but brief duration and surely cured. The desirability of remembering this is enhanced by the fact that some ocular paralyses, that are but slight in degree and of transitory duration, are those that forerun very serious disorders of the general nervous system. For the most part, "simple" or "rheumatic" ocular paralyses are confined to a single nerve or to a single branch of a nerve or possibly neighboring branches of the same nerve. The rule is not absolute but has a fairly commanding range. Conspicuous exceptions are seen in three cases described by Sir Wm. Gowers, in Vol. 2 of his work on Diseases of the Nervous System. Ocular paralyses may be merely the expression of a localized neuritis of the corresponding cranial nerves, due to exposure, under conditions which cannot be exactly defined, to the action of cold or chill.

Among the paralytic phenomena associated with diphtheria, paralysis of the ciliary muscle is common and that of the sphincter iridis not rare. Perhaps such affections of the extrinsic ocular muscles, due to diphtheria, are more frequent than is generally supposed. They certainly occur in connection with diabetes mellitus and insipidus. Also as parts of the history of chronic alcoholism.

Ocular paralyses are rarely hysterical or functional in nature. They do simulate hysterical manifestations but a safe rule is that the existence of an ocular paralyses is sufficient to justify the conclusion that, even if the case includes an element of hysteria, it is not *all* hysteria.

The paralyses under consideration have an interesting association with hemiparesia. They may be present whenever an attack of migraine is in progress and may so associate themselves with this disorder for years, although non-existent during intervals between attacks. But, in some such cases, the existence of organic disease has finally been demonstrated. It may be either central or peripheral.

So-called "simple" ocular paralysis, caused by so-called "rheumatism" is a fairly well-established condition. Hysterical, ocular paralysis is more than doubtful. Migraine may lead to ocular, muscular defects.

Ocular palsies may be the first symptoms of tabes dorsalis or locomotor ataxia. One of them may well give rise to a suspicion of the oncoming of tabes, provided it be unattended by any other symptom that opposes such a conclusion. This is the more probable if the patient have reached middle age and admits a history of syphilitic infection. Nor is the suspicion weakened by the possible lightness, or brevity of duration, of the attack of diplopia; such qualities hardly help to a discriminating diagnosis. In the large majority of cases in which such a paralysis does precede tabes, the effect is strictly unilateral. Such a conjunction of symptoms suggests the desirability of recourse to examination of the cerebro-spinal fluid and the Wasserman test. What is true, in this connection, of tabes, is likewise true of its near relative, general paralysis

of the insane. And what is true in cases of adult syphilitics, as to ocular paralyses, is likewise true of the juvenile form of the disease, as occasionally seen in the victims of congenital syphilis. In such cases, the paralysis may be the most obtrusive, or even the only, symptom of central, degenerative, nervous change. Several authorities have held that the Argyll-Robertson pupil may exist as the sole evidence of syphilis and a definite, specific paralysis may show a similar restriction. A case has been recorded, by the author, in the British Medical Journal for March, 1900, in which dilatation and immobility of the pupil, on each side, as a sequel of syphilis, remained without further extension of paralytic phenomena, although the patient was kept under observation for three years.

Chlorosis and otitis media are conditions in which, as in others already herein mentioned, the occurrence of an ocular paralysis is an event whose significance by no means need lie on the surface.

An Operation for Conical Cornea.

MADDOX, E. E. *Ophthalmic Review (London)*, February, 1912.

In view of the brilliant results that Bader's operation for conical cornea has given in some cases, it is a pity that, because of the danger of its issue in panophthalmitis, it should have so sunk, as it has, into relative desuetude.

It consists in excising a small, elliptic-shaped piece from the keratoconic cornea.

Wishing to essay this operation upon an eye whose mate had been considerably improved by the use of the thermo-cautery, the author proceeded as follows:

Transfixing the cornea with a narrow, tapering Gräfe knife and removing the elliptic-shaped piece, in the usual way, with aid of knife and scissors, the edges of the wound were united by a single, exceedingly fine suture, which involved only about the outer half of the substantia propria. Kalt and Angelucci have used and advocated this method of procedure. A large, broad tongue of conjunctiva was then detached from the lower part of the globe and drawn up so as to nearly reach the superior limbus. This was done by two sutures running over the upper part of the cornea towards the insertion of the superior rectus.

The margins of this tongue, at the same level as the excised ellipse, were then sutured with very fine silk towards the conjunctiva of the inner and outer limbus. These fine sutures gave way, in a day or two, but the superior ones, being of soft and thick silk, retained their hold for a week, after which the conjunctiva sank back, and happening to attach itself to the inferior limbus, as it should, no further adjustment was needed. The corneal suture fell out, of itself, after the healing was complete.

The eye was weak and watery for several weeks, though at no time was there the slightest iritis or even sluggishness of the iris. It is not

easy to decide whether the long duration of the convalescence was due to the disarrangement of the conjunctiva or if it would have occurred in any case. The vision of that eye, finally, was better than that of its fellow, although the conicity of the cauterized one was originally less than was that of the one whose operation is herein described.

The object of the conjunctival cover was not only to protect the corneal wound, during healing, but also to draw its edges together and thus relieve the corneal suture from tension. It may be questioned, even, if the approximation of the lips of the corneal incision, by the traction of the conjunctival covering, might not have made the corneal suture quite unnecessary; this would depend, to some extent, on the exactness with which the ellipse is cut. It is reasonable to expect a more rapid healing in proportion with an ideal emplacement of the corneal suture.

A Remarkable Case of Tubercl of the Retina. (Ein Bemerkungswert Fall von Netzhauttuberkulose).

KOMOTO, J. *Klinische Monatsblätter fuer Augenheilkunde*, Band xlix, ii.

Komoto's case illustrates not only a very rare condition but is unique, among reported cases, for the extensiveness of the retinal invasion. The right eye of a boy of fifteen years, had been inflamed for two months. The anterior chamber was shallow and contained blood. Posterior synechiae were present and, behind the clear lens, there were irregular gray prominences. Vision did not amount to even perception of light. The tension of the eye was high. The patient had had pleurisy a year before. Pathological examination showed the retina to be completely detached and infiltrated with typical tuberculous tissue, from the papilla, which was itself invaded, to the ora serrata. At the ora the choroid was attacked to a moderate degree. Elsewhere, it was infiltrated, but not with tuberculous tissue.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Alcohol and Caffein: A Study of Antagonism and Synergism.

J. G. PILCHER and TORALD SOLLMAN. *Journal of Pharmacology and Experimental Therapeutics*, January, 1912.

The fact that alcohol and caffeine are supposed to be antagonistic and are used as antidotes, one for the other, led the authors to undertake a series of experiments on animals, with each drug by itself and with the combined drugs.

They found that alcohol produces narcosis, or coma, or even death, according to the size of the dose. It produces motor depression increasing with the dose, and complete incoordination or ataxia.

Caffein, in non-fatal doses, causes only wakefulness and increased irritability. In fatal cases, from caffeine poisoning, there are varying degrees of excitement, followed by convulsions, the reflex irritability being increased in varying degrees according to the doses.

It was observed that alcohol and caffeine combined do not reduce the toxicity of each other in any dose. On the contrary, death occurs with less than one-half the fatal dose of each when given together; or, when the sum of the percentage fatality is only 14 3/10 per cent., the combined fatality is 100 per cent. It was further noted that alcohol narcosis delays death by caffeine, but the absolute fatality of caffeine is increased by alcohol.

The practical deductions may be summarized as follows:

1. *Caffein in Alcohol Poisoning*.—With fatal doses of alcohol, caffeine acts only deleteriously; with half fatal doses, moderate doses of caffeine may decrease the narcosis and hasten recovery, but large doses are dangerous.

2. *Alcohol and Caffein Poisoning*.—With small doses of caffeine, alcohol lessens the psychic effects; with large doses, alcohol adds to the danger.

3. *Caffein*.—The danger of cardiac death is increased by agents which alone have relatively little direct depressant effect on the heart. This would engender caution in the use of caffeine in heart disease.

Nitro-Glycerine Poison.

R. REDD PIRRIE. *The Practitioner*, February, 1912.

This extremely well-written paper is of especial interest because it is based upon the personal observations of a large number of cases which have come under the observation of a qualified inspector of mines of the British Government.

Without going largely into the detail of the cases, we may note that the writer calls attention to the greatly varying susceptibility to the drug in different individuals and in the same individuals at different times. We also are told that it is readily absorbed from the unbroken skin, and that the symptoms of poisoning are headache, jaundice, vomiting, pain in the epigastrium, dimness of vision, edema of the legs and fatal syncope, the latter often occurring after a period in which the patient seems to be making progress toward recovery.

In conclusion it is stated that on account of the volatile character of the drug, it is hard to take chemically in the body, the only organic changes being in the blood, and those can only be made out with certainty by the spectroscope. The drug, in its unaltered state, may be absorbed by either the alimentary or respiratory tract, or the skin, more cases arising from the handling of the explosive than in any other way. But the fumes from nitro-glycerine, when heated to soften it, and the gases involved during its combustion, the chief of which are nitrous

fumes, CO₂ and CO, have distinct poisonous qualities and serve to further complicate the clinical picture. In the majority of cases the effects of the poison are neither dangerous to life nor of long duration. But there is certainly grave danger of the production of changes in the retina and optic nerve and of a serious amblyopia.

In the direction of prophylaxis, there would seem to be a need for greater care in the carrying and handling of the explosive. It is also of great importance that where explosives are used the ventilation should be free, not only that the fumes may be diluted but also that the blood may the more readily get rid of any poisonous gases which it may have absorbed. The effects of the poison do not seem to be cumulative to any serious extent, so that, in those affected, absence from work soon brings about a cure. In some cases the frequent recurrence of symptoms necessitates the giving up of employment in which the explosives are used. In grave acute cases the inhalation of oxygen sometimes hastens recovery, if recovery be possible.

Hygienic and Dietetic Treatment of Arterial Hypertension.

ELLIOTT. *The Therapeutic Gazette.* December, 1911.

High blood pressure is a reaction to some form of systemic toxemia, among the causes for which are nephritis, gout, arteriosclerosis, emphysema, plumbism, and chronic anemia and no matter what the cause primarily, the elevation is probably due to circulating toxins. We have of course certain secondary changes such as cardiac hypertrophy and arterial fibrosis. Conceding this etiology our first effort should be the prevention of the formation of the toxins, and, failing in this, their removal. One great difficulty that confronts us at the outset in any given case is whether we should or should not attempt to lower the blood pressure at all. The effects of arterial hypertension are mechanical and the tissues soon become accustomed to a new standard of pressure with which it is often unwise to interfere. A systolic pressure of 200 mm. may be physiologic for maintaining efficiency in the circulation as is often the case in chronic nephritis and we should bear in mind that many of the symptoms ascribed to high blood pressure are due to other accompanying causes such as disturbance of the cardiac function. Every patient coming under observation with a high blood pressure should be subjected to a thorough physical examination with the idea of eliminating all systemic causes. The personal hygiene and habits of life should have especial attention and where the pressure is excessive should be regulated. Physical exercise, often of great value, may be in some cases of positive harm and should be prescribed or forbidden only after a careful observation of its effects by the use of the sphygmomanometer. Where exercise is contraindicated good general massage, daily, will improve the peripheral circulation. Occasional periods of rest in bed on a

low diet will often accomplish more than any other measure. Warm immersion baths of from fifteen to twenty minutes' duration followed by cooling and a brisk rub should be a part of each morning's routine. A reduction of pressure invariably follows a sweat bath or a Turkish or cabinet bath.

Digestive plethora is the rule with these patients. They either eat too much absolutely or too much relatively to their digestive powers. In either case quantitative reduction of the food is advisable. In all cases the amount of protein food should be restricted within certain limits and as the average adult does not need for physiologic purposes more than 90 grams of protein, it should be kept within these limits. In advanced chronic nephritis it may be necessary to reduce it to 50 or 60 grams. The great bulk of the diet should be made up of cereals, vegetables, fruits and farinacea. Coffee should be excluded, and alcohol permitted only with the strictest moderation.

An exclusive milk diet is not appropriate for routine use but may prove of value in selected cases where there are sudden hypersensitive crises, usually of uremic origin.

The fluid restriction, so long as the heart is functioning properly does not affect tension, but should depend on the action of the kidneys. With low urine output some parsimony in liquids is indicated and with cardiac insufficiency fluid restriction should be invariably resorted to. Care should be exercised in salt restriction. In strictly limited amounts it will do no harm in cases with good cardiac function, but wherever the slightest edema is present it should be excluded entirely from the diet.

The psychological treatment of these cases is of the greatest importance. Every possible thing should be done to improve the mental condition of the patient and above all he should not be allowed to watch the sphygmomanometer readings with either an elation or discouragement as it goes up or down with the pressure.

Pathologically High Blood-Pressure, with Some Considerations for Its Treatment by Non-Medicinal Methods.

A. AINSLIE HUDSON. *The Practitioner*, September, 1911.

This paper makes no pretense of advising that the treatment of high blood-pressure should not include the use of drugs but emphasizes the desirability of using other and general measures in connection therewith.

In the acute crises, those in which of course we must always use such depressor agents as the nitrates and thyroid extract, much may be accomplished by the wet pack. When this is used there is a preliminary slight rise with later an elimination of toxic matter and a rapid lowering of the pressure. The pack should be about 70 Fah., left on for several hours and may be repeated if necessary. Under this treatment the convulsions of uræmia quickly subside and the patient is tided over what would have otherwise been a fatal crisis.

The more routine cases, such as we see in our offices may be dealt with in a variety of ways. One of these ways is rest, physiological rest as a direct outcome of physical rest. With high blood-pressure and especially if any grave complication threatens, rest in a recumbent posture for several hours a day is imperative. During this period general massage and passive exercises may be employed, increasing in amount and activity as the case improves, each case being studied and treated individually. The patient's daily routine should be mapped out and he should be under constant supervision. In many cases the electric light bath proves valuable, stimulating the surface circulation and increasing metabolism. In bringing blood to the small capillaries, not only is the pressure lowered but lungs, skin and other organs are stimulated. Another electro-therapeutic measure of value is auto-condensation by means of the D'Arsonval high frequency current, the patient being for the time being part of an electrical condenser. The effect is a general lowering of pressure with an equalization of the circulation. In these cases the resultant increase of comfort to the patient is remarkable. In many cases the oxygen bath proves very helpful, the brisk evolution of the oxygen relieving heart and pulse markedly through the lowered pressure. This is a sedative measure and is especially useful in arteriosclerosis, cardiac neurosis, tachycardia, etc., and should be used in organic disease provided there is adequate compensation. The various forms of massage fulfill almost every physical indication, and of these forms the methods known as the Swedish medical gymnastics comes first with vibratory massage next, the latter being far more effectual than manual massage.

The diet should be one of limited protein value, not only simple but simply prepared, fats and carbohydrates should be kept at the lowest possible point, the quantity being restricted in many cases rather than the quality and each diet should be suited to the individual case.

Where digestive disturbances are present it is surprising how much benefit attends the use of the lactic acid ferment. The plentiful use of mineral waters of a saline character while at first and temporarily raising the pressure, are eliminated by skin, bowels and kidneys, abstracting water from the tissues and at the same time permanently lowering the tension.

Pleasant mental occupation and a relief from unpleasant surroundings, with a withdrawal of annoying conditions are almost essentials if good results are desired.

The Medicinal Use of Omnopon.

JAMES RAE. *The Practitioner, December, 1911.*

Since its introduction by Sahli in 1909, omnopon has been much favored by Continental surgeons as an anæsthetic, either alone or in combination with scopolamine, as is preferred by Häine and Brustlein. *The Lancet,*

on February 11, 1911, published an article by Leipoldt giving an anæsthetist's impressions, and in September of the same year one by Gray, recounting the experiences of an operator.

So far there has been no English literature on the medical usage of omnopon, but French, German, and Italian workers have employed it in various diseases, and their consensus prefers it to morphia. Rodari by trial on animals, has found that it stimulates the secretion and motility of the gastrointestinal tract—an effect which later changes to a paresis and ischemia of those parts. Bamberger has employed it in the tachycardia of Bæsdow's disease, Ewald states that though the veronal-hedonal group may fail in the insomnia of chronic myocarditis, of yielding compensation, and of arteriosclerosis, yet omnopon has always the soothing effect desired in those cases. In diabetes insipidus he found it reduced to a third the daily amount of urine and improved the thirst and other symptoms of the disease.

Parasporo gives details of fourteen cases and claims to have relieved the pains of malignant tumors, carcinomas, tabes, dorsalis, angina pectoris, neuralgia and lobar pneumonia; and to have checked the cough and lessened the dyspnea in asthma. For all these purposes he has found it more efficient than morphia. In haemoptysis it checks cough and diminishes the force of the blood stream. In asthma it acts on both cause and effect, the irritation of the nerve centers on the one hand and the spasm of the respiratory muscles on the other. Its subcutaneous use is advised in certain heart affections, both for sedative and tonic effect. It diminishes the frequency of the respirations and in dyspnea makes them more regular and quiet. It is best administered hypodermatically, the average dose being 0.010 Gm.; by the mouth double the dose is required. This is but one-fourth the dose which is used by Gray for surgical cases. Paraspilo summarizes experiences with omnopon by stating that it relieves pain, sustains the patient's strength, and not only makes life more tolerable, but even prolongs it in cases of cardiac, tuberculous, and malignant disease. Resembling morphia in this, it possesses the two additional advantages of not producing the occasional untoward results of morphia, and of acting in the desired way when the other has been inoperative.

(Reference to the articles quoted by the author shows that what he speaks of as "omnopon" is called by Sahli and other writers as "pantopon." This is said to be a mixture of the soluble chlorides of opium in which the relative strength of the following are claimed to be known—morphine, narcotine, codeine, papaverine, narceine, thebeine, hydrocotarnine, codamine, laudamine, laudanadine, laudanæine, meconidine, papaveramine, protopine, lanthopine, cryptopine, goscopine, oxynarcodine, xantholine, and tritopine. One gram of this mixture is said to equal five grams of ten per cent morphine.)

ALBANY MEDICAL ANNALS

Original Communications

A CASE OF ACROMEGALIA WITH AUTOPSY.

By HERMON C. GORDINIER, M. D., AND WILLIAM KIRK, M. D.

Our reason for reporting this typical case of acromegalia is that we found at autopsy a tumor which had almost destroyed the hypophysis cerebri. While we cannot affirm that this study sheds much light on the mooted question whether this affection is due to hypo or hypersecretion—it shows the characteristic symptom-complex of acromegalia associated with a pituitary body tumor and adds another case to the literature of this disease of obscure origin—first adequately described and named by Marie.

THE CASE HISTORY.

The patient was Mrs. I. C., 39 years of age. American by birth; married at 15 years of age; has had three children—two of which are living and in good health—one died at age of sixteen with typhoid fever; her father and mother are living and in excellent health.

There is no history of nervous or mental disease in the family. Her personal history is negative, except for the cessation of menstruation at the age of 28. The only symptom from which she has suffered and from which she still continues to suffer is pain in the bones, and this is especially marked in the region of the body of the sternum, and in the bones of hands and feet. This pain she states has been repeatedly diagnosed by physicians as rheumatism. The first change that she noticed was an enlargement of the breast bone near its center, about the size of a chestnut. Some months afterwards she noticed that her feet were growing large, and it was with difficulty that she was fitted with shoes that were comfortable, whereas she had formerly worn a number three shoe; she then was compelled to have shoes made to order which measured up to a standard of number eight. The gradual increase in the size of hands necessitated a corresponding increase in the size of the gloves worn.

She has suffered from intense frontal and occipital headache. She also noticed great general weakness, palpitation of the heart, shortness of breath on exertion and disinclination in any way to exert herself because of this asthenia. She is drowsy most of the time and perspires pro-

fusely. Her hair grows very rapidly and is very coarse; she has to have it cut short at frequent intervals, and she feels that the weight of it increases the severity of the headaches.

Examination—Weight, 135 pounds. Height, 5 feet 4 inches.

General Observations—The patient is rather slenderly built; there is very slight oedema of the extremities, with pallor and cyanosis of the mucous surfaces, and shortness of breath on the slightest exertion. The feet are strikingly enlarged and the ankle joints also large and heavy—due to the bony enlargement. The great toe seems very prominent. The os calcis is very large and projects well backwards. Both Tibiae, especially the lower halves, appear very heavy and prominent. The hands are somewhat short, thick and heavy, but are not correspondingly as enlarged as are the feet. There is a distinct Kypho-scoliosis—the thorax is voluminous; the sternum prominent and greatly increased in size with a distinct central depression—the clavicles are heavy and large, and the scapulae strikingly prominent, while the ribs and the costal cartilages attached to the sternum are much thickened and the intercostal spaces much widened. There is marked prognathism; the lower jaw being very heavy and enlarged and projects well beyond the upper jaw. The malar bones are symmetrically enlarged; the parietal and frontal bones are prominent, the superciliary ridges heavy and overhanging, and the occipital protuberance markedly increased in size.

The tongue is thick, heavy, large, and presents rather deep fissures, is coated with a yellowish fur and is without tremor. The lower lip is much thickened and everted. The ears are prominent—due apparently to the increase in size of their cartilages. The thyroid gland is distinctly enlarged. The hair of the scalp is decidedly coarse and somewhat sparse, but the scalp is clean.

Chest—Lungs show moderate emphyoema; they are otherwise negative.

Heart—The apex is not visible nor palpable, the cardiac dullness is effaced by a vesiculo-tympanitic note. There is a murmur systolic in time, having its point of maximum intensity at the apex well and conducted to the left. The second pulmonic and aortic sounds are accentuated.

Abdomen—The panniculus is well developed. The spleen is not palpable. The liver is not enlarged. The abdomen is everywhere tympanitic. Unfortunately the blood was not examined. Urine examinations were negative chemically and microscopically.

A very characteristic bitemporal hemianopsia exists; the patient being unable to recognize objects on either side of the temporal field of vision. The only parts of the fields in which vision remains distinct were the nasal halves; the ocular movements were normal. The eyeballs were not prominent—the pupils were midwide and reacted to light; taste, smell and hearing were intact. No evidence existed of the involvement of the cervical sympathetics.

Mental condition—Cerebration is slow; the voice low in pitch and the

memory somewhat impaired; the patient is drowsy and dull and is careless about her personal appearance.

Motion—All movements are slowly performed, but there is no apparent paralysis nor paresis; no muscular wasting and no tremor. The gait presents nothing characteristic.

Sensation—Tests showed nothing abnormal.

Reflexes—The deep reflexes were lost, but the superficial were not recorded.

Post Mortem Examination—May 10, 1908, at 2 P. M. Body that of a poorly nourished female—144 cm. in length. Rigor mortis well defined—Post mortem lividity of back and dependent parts—oedema soft in character of the feet and ankles. Mucous membrane pale; teeth well formed and appear normal. Pupils midwide and equal; no arcus senilis. The tongue appears very large and heavy; the bones of the face are prominent, and the malar bones strikingly increased in size. The parietal bones are large and their eminences are very prominent. The mastoid processes are increased in size; the occipital protuberance is massive and increased 5 cm. in length. The frontal bosses present almost tumor like enlargements, and the superciliary ridges are heavy and overhanging. The lower jaw is very large and protrudes much beyond the upper. The ears are much increased in size. The thorax is voluminous but somewhat asymmetrical; the left side being more prominent than the right, and on that side there is an acute angle formed at the junction of the ribs with the sternum. The sternum is massive and projects forward with a definite central depression in the body of the bone. The ribs are heavy and the intercostal spaces widened, and all diameters of the chest are increased. The junction of the cartilages and ribs is increased in size. The clavicles and scapulae are strikingly enlarged.

Left Scapula—Measures—spine to angle—8 inches in length. From the tip of the acromion to the lateral border of the scapula—6 inches.

Right Scapula—Measures from spine to angle, 8½ inches. From tip of acromion to middle of internal border, 7 inches.

Thorax—Measures at left ensiform of left side, 19 inches. On the right side it measures 17 inches.

Clavicles—Left measures 7 inches. Right measures 7 inches.

Face—Measurements: From root of the nose to tip of chin, 6½ inches; the interior maxilla, 12½ inches in length; the occipital to frontal, 23½ inches; occipital m., 28 inches; occipital bregmaatic, 22 inches.

Pelvis—Measures from anterior spine to its fellow of the opposite side, 10½ inches. The crests are 13½ inches apart.

Lower Extremities—Spine of ilium to left malleolus, 23½ inches. Opposite side, spine of ilium to right malleolus, 23½ inches.

Foot—Os calcis of each foot is very much enlarged, as is also the lower end of the tibia on each side. The arch of the foot on each side is well forward and thickly padded with soft cellular tissue, which projects backward.

Left Os Calcis—Measures from its tip to the great toe, 10½ inches.

Right Os Calsis—Measures tip to great toe, $11\frac{1}{2}$ inches.

Circumference of left, 12 inches. Circumference of right, 11 inches.

Description of the Hands—The hands are very large; the articulations of the first and second metacarpal bones with proximal phalanges are prominent.

The Costal Cartilages—are partly ossified and on the left side, where the above prominence is noted, the enlargement is found to be in the spongy bone, the spaces being wide and the septa delicate. The left pleural cavity is much larger than the right, and the liver is found displaced towards the left.

The cranial bones, on being sawed for removal of the skull cap, are found very soft—they indent and bend easily under the chisel.

The Dura—Is very adherent to the bone along the longitudinal sinus and is with difficulty separated. The channels of the veins of the diploe are very wide. The frontal bone is $\frac{1}{2}$ cm. thick. The occipital bone through the protuberance $1\frac{1}{4}$ cm. thick. On the inner surface of the frontal and parietal bones are irregular bony osteophytic growths, flat and smooth. Veins of the pia are distended. No marked increase of the cerebro-spinal fluid. The pia is normal.

Tumor—On lifting the olfactory bulbs backward from their position on the orbital plates of the frontal bones there is exposed a reddened elastic tumor-like body, which is adherent to the sella-turcica of the sphenoid bone, spherical in outline, about the size of an English walnut, and possibly cystic in nature. It springs from the interpeduncular space in the position of the pituitary body. The optic chiasm is flattened and pressed forward. Aside from this tumor the base of the brain presents nothing abnormal, and the cranial nerves apart from the optic are free. The tumor measures 2 cm. in height; 3 cm. transversely and $2\frac{1}{2}$ cm. antero-posteriorly. The tumor, having been accidentally punctured on removal, was found to contain a grumous like granular material. The blood vessels at the base do not appear thickened.

Brain—The brain appears to be unusually large; the lobes and convolutions are perfectly symmetrical. The gyri are well formed and the fissures are about the usual depth. The brain weighs 1550 grams. Antero-posterior diameter is 20 cm. Transverse diameter 16 cm. Vertical diameter through temporal lobe $6\frac{1}{2}$ cm.

Sternum—The body of the sternum at its middle portion shows a vertical depression externally, and on its inner surface there is a marked thickening in the corresponding middle portion forming a rounded protuberance 2 cm. above the bone, having dimensions $5\frac{1}{2}$ cm. by $3\frac{1}{2}$ cm.

Peritoneum—Both layers are generally smooth with the exception of one firm fibrous adhesive band from the omentum to the left side of the parietal peritoneum. There is no increase of fluid in the peritoneal cavity.

Appendix—The appendix is normal.

Thyroid—The thyroid gland is increased in size, the left lobe measures $8\frac{1}{2}$ by $4\frac{1}{2}$ by $4\frac{1}{2}$ cm. The right lobe 7 by 4 by 5 cm. The lobulations

are more marked than usual, some apparently calcified nodules are seen about the size of buckshot. The isthmus is thicker than usual and projects upward and to the left. In the right lobe is a nodule, $4\frac{1}{2}$ by $2\frac{1}{2}$ by $1\frac{1}{2}$ cm., which is situated in the upper part of the lobe. It has a thick fibrous capsule, the center is very red, homogenous and soft, and bears some resemblance to parathyroid tissue. There is a small nodule on the opposite side, of the same structure and appearance, which has approximately a corresponding position.

Thymus—No remnants of the thymus are seen.

Heart—The heart measures 16 by 15 by 6 cm. The pericardium is completely obliterated; both layers being firmly adherent. All the cavities of the heart are hypertrophied, particularly the right auricle and ventricle. The hypertrophy is not commensurate with the dilatation. The musculature is soft and flabby; there are no thrombi in the auricles. The mitral and bicuspid valves are thickened, and the orifices are widened. On the mitral valve the chordae tendinae are shortened and thickened, and the papillary muscles are hypertrophied and contain an excessive connective tissue. The aortic and pulmonary valves are normal. The aorta is not thickened. The coronary valves are not obstructed and show no thickening.

Lungs—Pleurae—No excessive fluid in either pleural cavity. The left lung is free from adhesions. The right lung has a firm fibrous adhesion at the apex and one of the lower lobe to the anterior chest wall and diaphragm. Section of the apices show lungs to be puckered—the right particularly so, where there are also calcified nodules, and some caseous areas on the surface of the pleura. There are occasional small calcified nodules in the lower lobe—the lung is elsewhere crepitant. The bronchi and vessels show nothing abnormal.

Spleen—The spleen measures 14 by 9 by 6 cm. The capsule is considerably enlarged, smooth, no roughening, the consistency is firm, on section there is seen increase of connective tissue.

Liver—The liver is not increased in size. The lower lobe shows a distinct depression, causing the formation of an extra lobe. The capsule here is thickened. On section the liver shows moderate, fatty infiltration, and marked congestion of the central veins.

Gall Bladder—Walls very thin. On section contains numerous faceted gall stones, one of which is about 2 cm. in diameter, mucosa normal.

Pancreas—Appeared normal.

Kidneys—The kidneys are slightly enlarged. The right measures 14 by 7 by 5 cm. The capsule adherent and thickened, and on section pale in color. Markings are indistinct, and the cortex slightly thickened. Left kidney 14 by $7\frac{1}{2}$ by 6 cm., same general appearances as on other side.

Adrenals—They are very small, and no abnormality was discernible to the naked eye. Intestines not opened.

Uterus—Was infantile.

Ovaries—The ovaries are atrophic.

Anatomic Diagnosis—Acromegaly. Tumor of the pituitary body. Hypertrophy of the thyroid glands, and hyperplasia of the parathyroid glands. Chronic fibroid pleurisy. Latent tuberculosis of the right apex. Healed tuberculosis at the left apex. Obliterative pericarditis, and dilatation of the heart. Interstitial myocarditis; chronic endocarditis at the mitral and bicuspid valves; chronic passive congestion of the liver and spleen, cholelithiasis, chronic parenchymatous nephritis.

Microscopic Description.

Lungs—The pleura is thickened by dense fibrous c. t., which has undergone moderate hyaline degeneration. The outline of this tissue is seen to conform to the alveolar walls; alveoli themselves are filled with a loose fibrous tissue taking the much lighter stain. In some areas alveoli are present; the epithelial lining swollen and generally desquamated. Here and there are foci of round cell infiltration, and the blood vessels and capillaries are congested; “desquamated epithelium often contains golden brown pigment granules” (*Herzfehlzellen*).

This picture is limited to the apex. In other portions of the tissue alveoli and epithelium show nothing abnormal, but the interstitial tissue shows proliferation—the small groups of alveoli contain serum—no tuberculosis is found.

Spleen—Capsule is slightly thickened and trabeculae also. The reticulum quite prominent and apparently increased; malpighian bodies are small, but otherwise normal; pulp is not increased; cells of pulp are normal, save that eosinophiles are much increased in number, they appear scattered throughout pulp and are always multinucleated.

Kidney—The capsule is distinctly thickened; the convoluted tubules at cortex generally dilated; malpighian tufts are normal in appearance; epithelium of tubules is well preserved. In the medullary portion occasional hyaline casts are seen. In the opposite kidney the glomeruli show distinct increase in fibrous c. t., both in the capsule and about the capillaries. There is also an obliterative endarteritis of moderate grade, otherwise similar to opposite. In the medullary portion a distinct increase in c. t.

Thyroid—The thyroid shows distinct glandular proliferation. Glands dilated and contain large masses of colloid, also an increase in stroma, which is in turn infiltrated with polynuclears, the presence of typical germ centers are noted in some of the lymphatic accumulations, which also show a rarefaction of cells resembling Oertel's lesion. The connective tissue overgrowth has in some areas compressed the glandular spaces of the thyroid and destroyed them. Alveoli containing colloid are found occasionally but the appearance in these sections does not give the likeness to thyroid tissue, and it does not appear to be related from a histological standpoint to the pituitary tumor. In the thyroid is an oval mass in which the microscopic section is entirely encapsulated by the dense connective tissue, which has undergone hyaline degeneration and is unusually thick, here one finds epithelium structure of glandular outline

arranged in the form of tubes and held together by delicate fibrous tissue in which are numerous mononuclears and polynuclears. The amount of epithelial structure varies in different portions, being most numerous near capsule and diminishing near center. In the center the connective tissue is greatly increased in amount and seems to be compressing and destroying the epithelium. It has undergone hyaline degeneration and has the appearance of pinkish homogeneous masses. Blood vessels are distended along the periphery. The appearance of the structure strongly suggests that it is a circumscribed adenoma which has undergone degenerative change. Other sections from this mass show the same appearance but there are variations in the extent of the degenerative change—it apparently has proceeded further in some portions than in others.

Bone—No change is seen microscopically; the bone substance appears cloudy and the lamellar structure is not apparent; bone cells are normal; medullary spaces filled with loose fibrous connective tissue, and partly with very cellular marrow substance containing a large number of red blood corpuscles and many nucleated reds of normoblastic and megaloblastic type; leucocytes of all types; myelocytes, but particularly noticeable is the increase in polynuclears and mononuclears eosinophiles. Occasionally large giant cells are found with many nuclei and clear protoplasm taking the eosinophile stain. The cancellous bone tissue is increased at the expense of the marrow; there is apparently no active bone proliferation now going on.

Adrenals—The cortex shows no change except slight fibrosis—the cells of the medulla are distinctly atrophied.

Tumor—On microscopic study the tumor is seen to consist of a fairly homogeneous mass of cells. The nuclei are regular in size, shape and staining characteristics; some cells are doubly nucleated. The growth as a whole is of uniform construction, mostly cellular, has very little stroma and an extremely delicate supporting frame work. It is fairly well supplied in portions with blood vessels of large size, but few smaller ones are seen. The cells show that nuclear disintegration and fragmentation such as is seen in the Adrenal. Doubly nucleated cells showing cell bodies larger than the predominating type may be seen and these, although few in number, are easily made out. The protoplasm of the cells by Van Giesen stain takes darker color and coarser granulation. In the few blood vessels present there is no attempt on the part of the tumor cells to invade the walls. The capsule of the tumor is quite complete, being made up of connective tissue moderately dense.

The following is a summary of the important pathologic changes found in this case.

A tumor of the pituitary body which had completely destroyed the glandular lobe; there remaining only microscopic rests of the nervous lobe. Chronic hyperplasia with only moderate increase in size of the thyroid gland, together with the formation

of a circumscribed adenoma with degeneration within the gland. Complete absence of the thymus gland. Atrophy of both the adrenal glands; hypoplasia of the uterus and ovaries; general splanchnomegaly; the heart being very large; the spleen and kidneys only moderately so; the brain of unusual size, but otherwise normal; remarkable and characteristic bony enlargement. The pons and oblongata were normal. It is regrettable that the spinal cord was not taken for microscopic study. Many of the fibers of the dorsal aspect of the optic chiasm presented degenerative changes.

The pathologic findings in this case correspond rather closely to the findings in those cases of acromegalia with autopsies heretofore reported in the literature. The association in our case with these changes in the pituitary body, of atrophy of the adrenals, complete absence of the thymus gland, hypoplasia of the uterus and adnexae and the adenomatous change together with moderate enlargement of the thyroid gland is certainly very interesting, and this association would seem to indicate a dependency or correlation of functioning of the various ductless glands.

Up to 1902 Woods Hutchinson was able to collect from the literature 263 cases of acromegalia, with 77 autopsies, and in only four of these was the pituitary gland uninvolved. In 24 cases in which it was examined the thyroid was normal in five, hypertrophied in twelve. The thymus was absent in seven, hypertrophied in three, and persistent in seven. Since this report an extensive literature on this subject has developed which in the main confirms the study of Hutchinson.

Purves Stewart, on the other hand, from a study of twenty-five cases of tumors of the hypophysis or its infundibulum, taken from the literature and four of his own, found acromegalia associated in but eight. This apparent discrepancy seems at first sight hard to reconcile but may on the other hand be explained on the theory that the normal functioning of the pituitary gland was not deranged in these cases of tumor without acromegalic symptoms.

It is a well known fact that tumors located elsewhere in the brain of an infiltrating character may greatly displace, compress, and distort adjacent structures without in anywise interfering with their normal functioning. Stewart himself states in ref-

To Illustrate Dr. Gordinier's and Dr. Kirk's Article on "A Case of
Acromegalia with Autopsy."
Albany Medical Annals, April, 1913

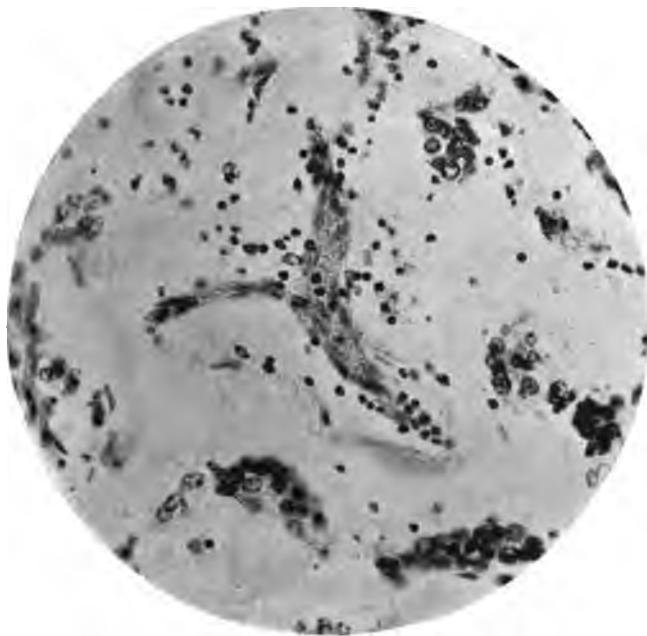


Photo-micrograph of adenoma of the thyroid (x400)

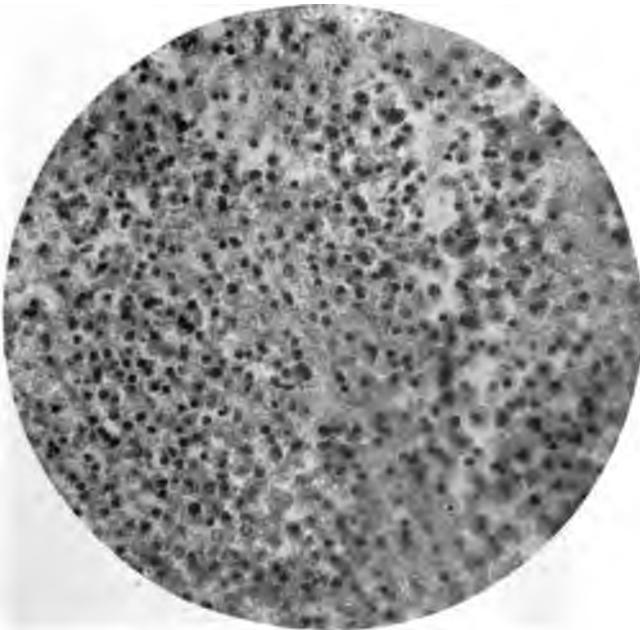


Photo-micrograph of tumor of the pituitary gland (x250)

**To Illustrate Dr. Gordinier's and Dr. Kirk's Article on "A Case of
Acromegaly with Autopsy."**

Albany Medical Annals. April, 1913



Tumor of the pituitary gland found in Dr. Gordinier's and Dr. Kirk's case of Acromegaly

erence to this very point that a striking feature in all of his cases was the remarkable size to which a tumor may attain in the region of the hypophysis, infiltrating some structures and distorting others, without giving clinical evidences of their presence by local pressure. Of the many theories offered in explanation of the frequent association of pituitary body changes with the symptom-complex acromegaly—only three stand out very prominently: First the theory of Majendie, Rechlinghausen, Dreschfeld, and others, that the changes found, especially of the nervous system, are the result of a nervous dystrophy and are similar to those found in tabes or syringomyelia. Second—the well known theory of Marie, who pointed out the relation between acromegaly and lesions of the pituitary body. His conclusion was that it is the accumulation of some toxic substance in the nervous system no longer neutralized by the pituitary secretion which produces a continuous irritation in the extremities, resulting in hyperplasia of bone and other connective tissues.

Marie believes these changes to be due to a hyposecretion, and compares this disease to myxedema and deficient thyroid secretion. Modena adheres to the theory of Tamburini, which is in part an elaboration of Marie's theory. According to Tamburini, there are in acromegaly two distinct phases; one a phase of hypertrophy and functional hyperactivity of the hypophysis, whereby abnormal substances are produced whose action is to cause growth of bony tissue. The other phase is one in which there occur in the gland profound secondary changes, cystic degeneration, adenomata, etc., so that the gland ceases to functionate. This is the period when the excessive bony growth stops and a cachexia supervenes inducing the fatal termination. While we feel that the theory of Marie is very attractive, it seems to us that the weight of evidence is strongly corroborative of the theory of Tamburini, as above described.

Of great interest in this connection is the recent experimental work done on lower animals by Herring, Howell, Paulesco, Cushing, and Shaefer. These observers found that ablation of the hypophysis in mammals produces a condition of lethargy, followed by coma and death in a few hours or days. There was a general agreement among them, that this result was due to the destruction of the glandular lobe, as extirpation of the

nervous lobe caused no immediate ill result. Herring and others have found that thyroidectomy in lower animals is followed by definite histological changes in the posterior lobe and pars intermedia of the pituitary gland.

Ponfich and others have noted the accumulation of colloid material within the pituitary gland vesicles in cases of myxedema. Geddes and Stewart have published an interesting case of endothelioma of the hypophysial region with distinct symptoms of myxedema but without recognizable thyroid changes.

Cushing and his co-workers find that partial or complete removal of the pars intermedia and nervous lobe is followed by a distinct effect on the animal's metabolism. The most constant result is a marked increase in the tolerance shown by the animal toward carbohydrate foods. Intravenous or subcutaneous injections of the posterior lobe on the other hand, lower the tolerance for carbohydrates and may cause glycosuria. Hyper-secretion leads then to diminished carbo-hydrate tolerance, this latter change may so stimulate the metabolic processes in the body, that more sugar is converted and stored up as fat. This possibly may explain the association of hypophysial disease, with Froelick's dystrophia adiposis genitalis, as well as Dercums' disease, adiposis dolorosa.

In support of the relationship between the characteristic symptoms of acromegalia and disease of the hypophysis are the very interesting results which have followed in a few cases of acromegalia where tumors in the region of, or of the hypophysis, have been successfully removed and were followed by marked improvement of all the symptoms and in one of Cushing's case, of a cure.

The study of our case is confirmatory of those who have found the symptoms so typical of acromegalia associated with disease of the hypophysis, and while it sheds no light on the mooted question whether or not this disease is due primarily to changes of a nutritional character of the hypophysis with consequent aberrant functioning either a hypo, or what is more probable a hypersecretion with consequent hypo-secretion, resulting in the abnormal bony growths, visceral and glandular changes. Or whether the pituitary disease is secondary to some as yet undiscovered pathologic cause.

**THE NEED FOR IMPROVED SANITARY CONDITIONS
AND THE BENEFITS TO BE DERIVED
THEREFROM.**

Read at a Public Health Meeting, City Hall, Albany, N. Y., January 15, 1913.

By GEORGE E. GORHAM, M. D.

When a great Governor of the State of New York desired to establish certain reforms,—reforms which he had been unable to bring about through the regular channels of legislation, he appealed directly to the people.

In like manner our zealous State Commissioner of Health, eager to correct some unsanitary conditions in the State; conditions which he has been unable to control through the machinery of the State Board of Health, appeals to the public.

Hence this meeting to-night.

“The need for improved Sanitary Conditions and the benefits to be derived therefrom” is the subject assigned me. I shall not attempt the discussion of any considerable portion of so vast and important a subject, but will attempt to emphasize a few of the more important points.

The need for improved Sanitary Conditions! What are they? Let us first understand what the present conditions are, that we may the more clearly see if there be need for improvement. The principle zymotic diseases in the State are Tuberculosis, Typhoid fever, Diphtheria, Scarlet fever, Measles, Whooping Cough, Smallpox and the venereal diseases.

These are all acute infectious diseases, that is, diseases caused by an infection, a pathogenic micro-organism, a germ. Since then all these diseases are caused by the introduction into our bodies of the specific germ, it follows that if we prevent the germ entering the body we prevent the disease.

The records show that there were reported in the State of New York last year:

of Measles	48,675	cases, with	977	deaths.
Typhoid fever	8,083	“	1,316	“
Tuberculosis	33,983	“	14,205	“
Diphtheria	20,417	“	1,923	“
Whooping cough	8,362	“	819	“
Scarlet fever	26,095	“	1,149	“
	<hr/> 145,615		<hr/> 20,399	

One hundred and forty-five thousand six hundred and fifteen cases of sickness with all the suffering and expense entailed.

Twenty thousand three hundred and ninety-nine deaths. Loss to the State of 20,399 lives. Why this loss with this sorrow and suffering? Why this loss of time and expenditure of money? Why? Why, because we failed to protect the people from infection. Had the germs been attacked at their source, attacked and destroyed as soon as they left the infected body of the first case, all subsequent cases of the disease would have been prevented.

We had, in a single year, 145,615 cases of illness and 20,399 deaths in the State which might have been prevented by perfect sanitary conditions.

We are emerging to-day from those darkened ages when a blind superstition made us believe that God was sending sickness and death upon us as punishments for our sins. To-day we stand in the morning light of scientific truth as she is dawning upon us and what a spectacle do we behold? Not the ignorant and superstitious fasting and praying, thinking to appease God's wrath, but the intelligent and enlightened citizen spitting his tubercular germs into the air to be dried and blown into the lungs of his neighbor. The typhoid patient with his stools carelessly thrown out to infect a water supply or a dairy. Planting an epidemic! Certainly he sows the seed and the epidemic of typhoid fever follows.

We see the household disregarding the rules and regulations of quarantine and in some instances evading as far as possible the restrictions of the health officer in his efforts to prevent the spread of disease.

We see cesspools of vice and contamination in all our cities infecting our people with the worst of diseases. Planting these germs in men and women, in boys and girls, and they to pass them on to future generations.

One thousand cases of paresis every year, find their way into our State Hospitals for the Insane there to slowly yield to the ravages of the spirochete pallida (the germ which causes syphilis) until every function of the body is destroyed and death ends the scene. This is not one hundredth part of the destructive work of this one little germ, yet human beings continue to hand it on from one to another and the laws of heredity pass it along.

down the line of posterity. Public sentiment to-day prevents sanitary regulation of these diseases.

Shall we continue to cultivate germs that we may hand them on to the next generations? Inflicting disease and suffering upon our children, reducing them to poverty and pauperism? Do you wonder that the State Commissioner of Health leaves his executive work in his office and with the aid of the physicians of the State cries out to the people for co-operation in his fight to prevent disease?

He appeals to you to-night for co-operation. Appeals for co-operation in preventing the contamination of our lakes and streams. Appeals for the careful observation of every sanitary regulation and requirement that the tubercle bacillus may be destroyed at its source and not go floating through the air on its errand of death and destruction, that the germs of typhoid shall be destroyed as soon as they leave the body and not float by the billions into our water supplies to cause their annual record of sickness and death.

We look back with pity upon him who in ignorance scattered his germs of disease, witnessed the epidemics, and regarded them the expression of God's anger upon a wicked people. What will future generations say of us as they scan our record? They will say there *was* need for improved sanitary conditions. And I submit that the evidence just shown proves that there is a need, a great and most urgent need, for improved sanitary conditions.

What is that need? Need that we destroy the disease germ at its source as it leaves the body and cease passing it on to our neighbors.

And the benefits to be derived therefrom, what will they be? The answer is easy. The extinction of Tuberculosis, of Syphilis, of Typhoid fever, of every one of the long list of infectious diseases.

The answer is easy, but who can comprehend the magnitude of the blessing and benefit to the race if freed from all infectious diseases? Give wings to your imagination and picture it if you can. These words of mine are not a poet's license, an enthusiast's dream or an author's soliloquy.

They are cold scientific facts. They are an arraignment of the people at the Court of Sanitary Science. They are an appeal from

those who will come after us, those whom we shall create, that we cease our sinning against sanitary law, that we cease contracting diseases and carelessly passing them on to those about us.

For centuries epidemics of yellow fever prevailed on our southern coast and claimed its victims by the thousands until the United States Army appointed a commission during the late Spanish-American War to investigate and correct the sanitary conditions of the City of Havana. The commission did a great work. Two members of the commission died from self-induced yellow fever in proving the truth of their findings; namely, that the universal way of communicating yellow fever from one to another was to have a mosquito—the *stegomyia fasciata* bite a person infected with yellow fever, by which act the mosquito was itself infected, and then after allowing the germ to develop for a few days in its own body, to bite another person and in so doing deposit the germs, planting them in the victim's body to reproduce yellow fever.

This was one of the greatest of modern discoveries in sanitary science and enabled us to wipe out yellow fever in the City of Havana where it had existed for the last four hundred years.

13. "Happy is the man that findeth wisdom, and the man that getteth understanding.

14. For the merchandise of it is better than the merchandise of silver, and the gain thereof than fine gold.

15. She is more precious than rubies; and all the things thou canst desire are not to be compared unto her.

16. Length of days is in her right hand, and in her left hand riches and honor."

To me those lines from the Third Chapter of Proverbs are the most forceful, faultless English ever written. "All the things thou canst desire—are not to be compared unto her." *Not to be compared unto wisdom.* See all the reward of honor, of riches, of length of days which accrued as the result of that nugget of wisdom; of understanding the simple fact that the mosquito was the only carrier of the germs of yellow fever. Now we simply shield the yellow fever patient from the mosquito and we prevent an extensive epidemic where once we spent millions of dollars in quarantine in trying to control an epidemic which raged every

year claiming its victims by the hundreds and was arrested only by a frost to kill the mosquito.

It is an easy matter to control yellow fever from the fact that the only carrier of the germ is the mosquito. Not so with tuberculosis, typhoid fever and all the other infectious diseases in the State. They all have many carriers (except malaria). Food, water, clothing, the hands, flies, anything to which the germ may cling and be carried to another person. Therefore the necessity for the public, for each individual whose body harbors disease germs and for every person caring for an infected person to be aroused from their carelessness and indifference about allowing these germs to escape and pass on to another. Our State and local boards of health are doing noble work. They are diligent and in earnest, but these disease germs are not controlled by legislative acts nor by the edict of boards of health. The person who is infected and they who care for him are on the firing line and they, and they alone, must make the fight if we are to win the battle of extermination of the tubercle bacillus, the typhoid bacillus and all the rest. The Health Department of the City of Albany has done much to prevent the spread of disease. At an expense of a quarter of a million dollars the city put in a filtration plant and practically banished typhoid fever from our midst. For ten years before the plant was installed we buried eighty people every year from typhoid fever. Since the plant was installed, about twenty, and nearly all, if not all of these cases were imported cases.

A large and finely equipped hospital for tuberculosis, just west of the city, with a dispensary in the city, are maintained at city expense in the effort to protect the citizens of Albany from being infected with tuberculosis but we cannot have every person who is ill with an infectious disease under quarantine, nor have a health officer standing over him, therefore the public appeal to-night to you and you and you, to every person in the State to awake from this lethargic state, to arouse from this carelessness and indifference about spreading disease germs, to cease regarding quarantine as an injustice and unnecessary, cease trying to evade the restrictions placed upon you in the case of contagious disease and join hands with the health departments and do well your part. Remember that the garbage pail and the

manure pit are breeding places of flies and that the fly may place in your food, any day, the germ of typhoid or diphtheria.

Remember that if your house is filled with flies they are breeding less than four hundred feet from your house as the fly is a home body and does not travel more than four hundred feet from his place of birth. Therefore, destroy his breeding place by keeping every thing about the house *dry* and clean.

If you have a case of diphtheria, don't ask your doctor to not report it. See that the case is reported and kept in close quarantine until the cultures from the throat and nose prove to you that the child no longer harbors the germs of diphtheria.

Become sanitarians and co-operate with your health departments. Science revealed to us in the Nineteenth Century for the first time in the history of the world the cause of infectious diseases, and also the way to prevent them.

To us much has been given and of us much is required.

Let us not be found wanting.

PUERPERAL INFECTION.

Read before the Medical Society of the County of Dutchess, January 8, 1913.

By JOHN H. DINGMAN, M. D.

This is a condition beginning within a few days after labor, where an infection has occurred, attended with acute inflammation, attacking one or more of the reproductive organs and with septic infection of the blood and general system. The local inflammation may extend to one or more of the reproductive organs, that is to say, they may be involved in a general inflammation and their adnexa and cellular tissue. However, other organs may be involved by infective trombi.

The general infection may be divided into three forms of infection:

First, *Sapremia*, caused by the absorption of toxines produced by the putrefaction of remnants of placenta membranes and blood clots left behind in the cavity of the uterus.

Second, *Septicemia*, a general infection produced by the absorption of toxines from the living tissue that has become involved by the pathogenic microbes, thereby producing inflamma-

tion, suppuration and necrosis of the affected organs. In this condition streptococci are almost always found.

Third, *Pyaemia*, a form of blood poisoning by pyogenic organisms in which living bacteria are transported by the blood current to distant tissue where they grow and produce abscesses.

Briefly speaking, cases of sepsis present the following blood picture: An increase in the relative proportion of the polynuclear cells on differential count above eighty-five per cent: and the higher the proportions, the more virulent is the pyogenic process. This is associated with a greater or less degree of leucocytosis. And the higher the leucocytosis with a given percentage of polynuclear cells, the better ordinarily is the body resistance toward the infection at the time the blood examination is made. A slight polynuclear increase with pronounced leucocyte increase indicates slight infection and well-marked body resistance. A pronounced polynuclear increase associated with a pronounced leucocytosis indicates a severe infection and good body resistance. A pronounced polynuclear increase and little or no leucocytosis, indicates severe infection and little or no body resistance. An increasing polynuclear percentage and stationary or decreasing leucocytosis, indicates an increasing degree of infection and decrease of body resistance. A decrease in both polynuclear percentage and in the leucocytes denotes improvement.

On these general principles you will see how important a blood examination is and will give information in septic conditions which cannot be obtained in any other way. The blood examination in no manner replaces the blood culture; the blood examination is a clew to the patient's condition at the time, while the culture is for the purpose of learning if the causative organisms are circulating in the blood and if so, then to determine the exact nature of this infection.

Each case of puerperal infection must be studied and treated individually. In studying each case we must determine whether the infection is confined to the genital canal or some of the reproductive organs, and must carefully determine the nature of the intoxication and the resistance of the patient.

The curative treatment will differ materially in the different local inflammations and their progressive stages, however, in a great majority of cases there are principles and methods of

management that will apply to nearly every case, regardless of the site, extent or degree of local inflammation.

Two of the most important features are thorough disinfecting of the birth canal from the vulva to the fallopian tubes, and general supportive treatment of the patient by easily assimilated foods and stimulants. Thorough disinfecting of the birth canal is accomplished chiefly by irrigating the vulva, vagina and uterus with antiseptic solution and removal of septic masses from the uterine cavity by the aseptic finger or curette, also by the introduction of aseptic gauze for the purpose of disinfecting and drainage.

The general support of the patient is to be sought by easily assimilated foods and stimulants. General depression is indicated by frequency and feebleness of the pulse and this means a feeble heart. The heart action must be kept up temporarily by cardiac stimulants, as whiskey, strychnine, digitalis, etc., and permanently and indirectly, by easily assimilated foods. In giving alcoholic stimulants it is quite impossible to say what quantity to give: some cases require much more than others and will take astonishing doses without intoxication. For the reduction of temperature use cold packs or sponge with ice water. For the relief of pain, give morphine. For the relief of vulvitis, wash with warm alkaline solution and Sitz bath. In some extreme cases it might be necessary for ice packs to be applied to the affected parts. Buboes and abscesses should be opened and allowed to drain freely. Absolute rest in bed is most important.

For Vaginitis.—If the lacerations in the perineum have been repaired all sutures should be removed that they may be aseptically clean by vaginal irrigation of 1-3000 bichloride solution or a two per cent solution of creolin. After this has been thoroughly done, all ulcerated surfaces on the vulvo-vaginal wall of cervix uteri, must be touched up with a strong solution of silver nitrate or tincture of iodine.

For the Endometritis.—The uterine cavity should be explored by the sterile index finger. If the uterine cavity is found to be perfectly smooth, a douche of normal saline solution should be given, on the contrary, if found to be jagged and rough and to contain remnants of placenta, it should be thoroughly cleaned out with the finger, followed by saline douche, after which the uterine cavity should be packed with gauze saturated with tincture of

iodine, and left to remain in the uterus for a period of from twenty minutes to one-half hour. After which time, the packing should be withdrawn and no further interference with the uterus resorted to. Should there be any particle of placenta left in the uterine cavity that cannot be removed by the finger it should be removed by the gauze packing. The patient should be put in Fowler position, thereby establishing better drainage of the pelvis which tends to hasten the recovery.

After the uterus is thoroughly emptied, the pelvis should be left absolutely alone except for postural drainage.

The blunt curet may be used in the early weeks of pregnancy but not in the latter half of pregnancy, because it breaks down nature's protective walls and allows the streptococci to penetrate the deeper structures, thereby greatly increasing the danger of the patient.

Salpingitis is found to be more common in cases treated with intrauterine douche and does not give as good results as simply wiping out the uterine cavity with sterile gauze or swabbing out the uterine cavity with tincture of iodine. When the infection has extended beyond the uterus, local treatment should be withheld and other measures resorted to.

Most fortunately in many cases, nature circumscribes the infection and large pelvic exudates may disappear by the aid of dry heat and rest. Along this same line of treatment, the enlarged tubes and ovaries may greatly improve and return to their normal functions. As long as the patient's condition improves, no surgical interference is advisable. After the acute stage of infection has subsided, it is much easier to make an exact diagnosis and all operations are attended with less risk. In cases where there is a definite localized collection of pus, it should be drained by posterior vaginal section.

The numerous lesions caused by septic infection constitute the strongest kind of an appeal for rigid aseptic technique in the practice of obstetrics.

MODERN USES OF ANAESTHETICS.

*Read before the Medical Society of the County of Rensselaer, at Troy,
January 14, 1913.*

By WALTER T. DIVER, M. D.

In Morton's public demonstration of general surgical anaesthesia by ether, October 16, 1846, at the Massachusetts general hospital, surgery made its great stride. With every advance along the lines of anaesthesia therefore surgery will be benefited.

Since Morton first used the anaesthetic the technique of its administration has been revolutionized, developed and refined to such perfection that while deaths were numerous from its use twenty years ago, according to the European statistics compiled by Ormsby, Julliard and Hewitt there is now a death rate of one case in 16,302 when ether is used and one in 3,162 when the anaesthetic is chloroform. The American Statistics of which Gwathmey of New York is the authority is one in 5,623 by ether and one in 2,048 cases where chloroform is administered. American statistics of local anaesthesia show a total of 15,000 administrations with no deaths.

One blest with even the slightest amount of common sense would immediately conclude from the statistics quoted above that if there has been one death in 5,000 administrations of ether and one death in 2,000 administrations of chloroform and none whatever where a local anaesthetic was employed, a local anaesthetic or the nearest agent capable of producing anaesthesia, where the least part of the body would be affected, should be given the preference and become the agent of choice.

From the day I graduated from medical college, until about this time last year, I believed that practically every operation, from the amputation of a digital extremity to a resection of bowel, should be attempted only with the aid of a general anaesthetic. My hospital and other clinical training had decided that for me and it was from these sources that I gained my impression. I rarely saw surgical work attempted except with a general anaesthetic, it being the great exception, rather than the rule, to perform even simple operations under a local anaesthetic.

My views on this subject, I am happy to say, have changed very materially, which proves beyond a doubt in my mind,

that seeing other men work in other parts of the world stimulates a condition inclined toward hibernation and makes one alive to the fact that there are many surgeons in the world proceeding on a different plan, whose achievements are of a high order and who are constantly aiming to advance nearer perfection.

The first clinic in which I participated was at Tübingen in southern Germany, a town of about 1,500 people. More work was done there in one day in each branch of surgery than is accomplished in Troy in a week; and while ether is given here in about twenty cases out of twenty, it is administered there in only about from three to five cases in twenty. The experience in other cities, namely, Freiburg, Heidelberg and Berlin, was practically the same. The surgeons whom I was fortunate in having the opportunity to assist never thought of administering a general anaesthetic in cases of hemorrhoid, fistula, fissure, inguinal and femoral hernias and hundreds of other conditions for which general narcosis is produced here.

Just because one has been abroad and studied is no reason why one should return to his home community, replete with ideas, to force them on the profession and public merely to spread the impression that he has studied in a foreign land. This is not my intention and certainly it is not my purpose in presenting this paper to you. One does not, however, need more than human eyesight to perceive readily that there have been changes and marked changes at that, that are advanced to a remarkable degree over the methods one has been accustomed to seeing at home. The consideration of the mere quality of catgut and the method of disinfecting the field of operation are not the only improvements which should receive a surgeon's concern. If advances are made in many other respects that are fundamentally of far greater importance it would not matter quite so much what kind of catgut was employed or whether the field was painted with iodine or Harrington's solution. Inasmuch as I am to confine myself to anaesthetics I ask your pardon for a little digression.

After an anaesthetic that produces general narcosis, spinal or sub-arachnoid anaesthesia presents the greatest field of usefulness and progresses more directly on the local anaesthetic line, because the anaesthesia is thus limited to parts more nearly

required. The early development of spinal anaesthesia differs in no way from the development and perfection of technique of other anaesthetics. Following Bier's report on spinal anaesthesia in 1899 many surgeons practiced its administrations from two to three years but were not always successful in preventing serious results. For some time its use was abandoned but it was eventually taken up again about five years ago and it is a certainty that spinal anaesthesia is now permanently established and has acquired a place in recognized surgical procedure. At first cocaine was employed. Now novocaine, tropocaine, and stovain are the most commonly used drugs. Of course, no just estimate of the merits of any method can be determined until large numbers of cases have been subjected to its use. From the experience which I have had and am having, I consider spinal anaesthesia one of the most valuable additions to modern surgery, and when the profession has laid aside its prejudices and its reluctance to abandon time-honored methods in preference for a new one it will be extensively used. I ask your indulgence if the assertions I am about to make appear a little bold, but you all realize that the failure to do certain things right is not so often the fault of the agent used as the agent who is using it. Many surgeons fail to realize that proper administration requires special instruction and experience. One can not become proficient in giving spinal anaesthesia by merely reading about it. It is most essential to learn the value of the different drugs, how each acts, when each should be used and how much should be used. The surgeon should be in a position to follow the cases that have been injected by a man of experience. He should glean every bit of available information, study the technique in particular from a master hand and under the same guidance obtain experience in giving anaesthetics as they should be given. The surgeon who supplies himself with a preparation called stovain, tropocaine or novocaine and sufficient needles to reach the spinal canal and then thinks that he has adequate equipment with which to work, holds himself up to ridicule. It is essential first of all to have the knowledge necessary to do the work and then with a clear head he will learn when to do it and where to do it, then produce his equipment.

No man lives but who can add to his knowledge of affairs by

learning from his fellow men and no man has been so wise that he does not have to. We should be as generous as possible in our opinions and not so prone to condemn a certain method just because we, ourselves, have not used it.

Spinal anaesthesia has wonderful advantages vividly known to those who have had experience with it. Lives perilously operated with any other anaesthetic can be saved by this method. Appendectomies, ovariotomies, hysterectomies, perineorrhaphies, trachelorrhaphies, lithotomies, prostatectomies, all conditions in the pelvis, compound fractures of lower limbs and varicose veins, amputations, in fact every known condition below the umbilicus can be safely operated now under its influence and no doubt later every condition amenable to surgical treatment.

Operate in the pelvis or lower abdomen under spinal anaesthesia once, notice the nice, calm conditions of the intestines, and you will never desire to use anything else. To be able to speak if necessary to your patient at the most critical time of your work is a privilege and satisfaction. The patient, on the other hand, comes to the operating table strong from nourishment and in every way able to withstand the shock. You know how much stronger you feel, how much more capable of overcoming an obstacle when you are well fed up. We all know that it takes a week to recuperate from the two or three days period of starvation necessitated by ether. Contrast this with the freedom of nourishing a patient before operating and even stimulating by mouth during the operation when spinal anaesthesia is used. The psychological effect on the patient who does not have to become unconscious by taking ether is also to be considered. Every one knows who has had any experience that a cheerful frame of mind tends to avert shock. How wonderful it is to have a patient come down from the operating room after her appendix has been removed and receive her parents or relatives in a manner so much different from the present conditions. What a satisfaction it is when the family with tears in their eyes and worried as only one knows who has gone through it, is greeted by the girl with the startling exclamation, "Why I am fine; feel splendid. I never experienced the slightest pain." She can take nourishment directly and begin at once to get strong. Think these things over, gentlemen.

They are some of the advantages of a newer method and they certainly have been demonstrated sufficiently to be entitled to your consideration. I have administered spinal anaesthesia in approximately 250 cases. I had one failure in the second twenty-five in which I was unable to draw a spinal fluid. The anaesthetic did not seem to be absorbed well in four or five cases. I had not the slightest paralytic symptom in any of them after the first three hours. Most of the patients were able to take nourishment, before, during, and directly after the operation. The practice of giving three or four hypodermics was obviated because shock was eliminated to begin with. And at the end of from two or three days to a week the patients had apparently regained their former strength. Sometimes the patients were a little nauseated at first, and for a few hours after sitting up complained of pain in the back of the head but that was promptly cleared up by a weak application of electricity.

About the technique;—the greatest care should be taken to avoid infection, which is fatal. Prepare yourself and patient as for a major operation. With the patient sitting or in a lying position, the site to be injected is cleansed with ether or alcohol and painted with iodine. Select the space between the lumbar spinous processes in which you desire to inject by observing the level of the crests of the ilia. On this level is the spinous process of the fourth lumbar vertebra. Inject between either the fourth and fifth, third and fourth, or second and third. I usually place my needle between the fourth and fifth. Inoculate preliminarily with cocaine, one per cent, just a drop or two. Insert needle to subarachnoid space. Allow about the same amount of spinal fluid to flow out, commensurate with the amount of anaesthetic fluid you propose to inject. Allow the patient to remain in that same position for a few minutes and then assume a comfortable position for a few more minutes with head on pillow. Then scrub up the field of operation.

There are no contraindications to the use of the anaesthetic for work below the umbilicus. If the operation is such an extremely long one that the effects of the spinal anaesthesia wear off, ether can be easily administered and most of the shock of the operation will under these conditions be eliminated. There are no unfavorable sequelae, as persistent nausea, bronchitis, nephritis,

and, most annoying of all, the intense agonizing thirst. Another argument against its use, but a very weak one, is that you are absolutely committed to dose given. That is a fact, but I have never had any reason to be sorry for giving an injection after it was administered through the experience I have had.

I will now cite a few of the many cases which I have successfully operated at the Troy Hospital just lately, using only novocaine and tropocaine.

CASE I—Mr. M., Troy. Age 67. Bad mitral and aortic murmurs, advanced arterial sclerosis, bronchial asthma, irregular pulse, weighed about 90 pounds, reduced from 160. Had syphilis and gonorrhoea, the latter several times. Large ulcer comprising whole calf of right leg to bone. So weak that he could not stand without support. Ether absolutely contraindicated. Patient given a spinal anaesthetic of tropocaine at the Troy Hospital. Left limb removed at junction of upper and middle third of thigh. Patient commented during operation, returned to bed in one-half hour, having experienced no pain in the least. Patient ate a light meal ten minutes after he returned to his room. At once began to pick up. In two weeks he had an entirely clean stump. Left the hospital and remained well. The prognosis given this man before I saw him was that his chances were very slim for recovery.

CASE II—Mrs. W. Age, 31 years. Had taken ether before and had vomited for ten days. Patient operated at Troy Hospital. Given a special anaesthetic of novacaine. During operation patient slept quietly. Once asked for water which was freely given. Ovarian cyst size of large muskmelon removed and appendix. Anterior colporrhaphy and perineorrhaphy, tracheorraphy and several large hemorrhoids removed. Patient had not slightest symptom of nausea or pain. Began eating immediately and went home in two weeks, not having suffered any inconvenience but that of lying in bed and soreness at anus.

CASE III—Mr. G. Age 62. Bronchial asthma, poor heart, and weak physical condition altogether. Had enlarged left testicle size of cocoanut for twenty years. On account of bad heart for years was advised not to take ether. Operated man at Troy Hospital and gave anaesthetic of tropococaine. In twenty minutes patient was back in bed and it was difficult to make him believe that condition was removed. Patient was up in four days and perfectly well in ten.

CASE IV—Girl, 22 years. Diagnosis, pelvic abscess. Patient given spinal anaesthetic of novacaine at Troy Hospital. Patient was in serious condition. Supravaginal hysterectomy and appendectomy done. There was not the slightest evidence of any shock and patient made an uneventful recovery.

CASE V—Mrs. F., 63 years old. Had had stroke, advanced arterial sclerosis and a severe aortic lesion. X-ray of foot showed extensive

degeneration of bone of whole member. Anaesthetic by ether decidedly contraindicated. Patient operated upon at Troy Hospital under spinal anaesthetic of novacaine. Patient had not slightest untoward symptom. Removed foot above malleoli and patient made an uneventful recovery.

Now I cite only a few of the many conditions where practically the patient's life has been saved by eliminating shock. In many, many other conditions I have operated in lower abdomen and lower limbs and have had the same splendid results.

Gentlemen, you have heard what I have had to say about spinal anaesthesia, but I only advocate it because it is tending more toward a local anaesthetic. I claim now that spinal anaesthesia should not be used in many instances where it now is, the reason being that it anaesthetises a greater area than is necessary, where the lesion could be taken care of absolutely and entirely by a purely local anaesthetic. To my mind the ideal way is to restrict the exhibition of anaesthetic material as regards space, amount and duration to what is essential to produce muscular relaxation and prevent pain. This triple advantage is secured by local anaesthesia. Therefore, gentlemen, I advise most decidedly that while spinal anaesthesia should be used in place of ether in many, many cases, a purely local anaesthetic should be employed instead of a spinal anaesthetic in scores of conditions in which both ether and the spinal anaesthetic are now utilized.

Here again, as in everything else, it is not always the agent used but the manner in which it is used. This is of paramount importance. One is able with experience to render a part absolutely immune to pain with one-half the quantity of anaesthetic that another less skillful could not accomplish with twice the amount. For instance in operating an inguinal hernia with a local anaesthetic, the cord and cremasteric muscle must be injected in a particular way with one strength of anaesthetic and the skin and other tissues by another. When operating there is no forcing; the patient's condition is the same as if he were in bed at home; there is no shock, starvation or annoyance of any kind, but the part to be operated must be anaesthetised properly to bring about these results. Hemorrhoids, fissures and fistulas can be easily done under a local anaesthetic. An exception is made of a Whitehead which is very seldom now needed.

Many and extensive regions involving large and deep areas can be anaesthetised if the operator knows just what he is going to do

and how much time it will require. One, two, three, four and even eight ribs can be resected. The brachial plexus can be infiltrated and practically any amount of work done on the arm. Any goiter that a surgeon would operate can be easily accomplished. Brain tumors, inguinal, femoral, umbilical and ventral hernias of all kinds, hydroceles, varicoceles and scores of conditions in which ether and spinal anaesthesia can be eliminated if the surgeon so desires and the elimination would relieve the patient of the great agent of shock, with the exception of loss of blood, known in surgery.

I am not talking about something I have only read. I have done every one of these operations under a local anaesthetic, except to open the skull and I have assisted several times when this was done. There is always a difference of opinion about many of these things but if the welfare of the patient is given due consideration rather than the convenience of the operator, the latter method of anaesthesia would much more often be used.

The following is a small variety of the cases done under a purely local anaesthetic which are practically always operated under ether.

Three cases of goiter operated by me just lately under a local anaesthetic of novacaine without the slightest discomfort to patient.

CASE I—Cystic goiter about size of two duck eggs, in woman 46 years old. Patient home in one week perfectly well.

The second was a goiter as large as I have ever seen operated, in a woman 49 years. Bound down so that every one-eighth of an inch had to be fought. It was a parenchymatous struma involving the whole neck. The blood vessels were greatly dilated making a softer and more vascular mass than is generally met with. Typical symptoms of thyroid toxicosis were present. Exophthalmus, pronounced tachycardia and extreme nervous symptoms, which one might say would make a local anaesthetic out of the question. The patient was carefully injected with one per cent novacaine at Troy Hospital and a large goiter the size of a large cantaloupe removed without the slightest uneasiness or pain. Several times when on account of the intense bending down of the mass and where it was quite impossible to tell just where recurrent laryngeal was located; the part was placed under ligature, the patient asked to speak, when voice rang out clearly the tied section was cut through and we were absolutely certain that we had not molested this most important nerve and consequently had no loss of voice. This is a very emphatic reason why the use of a local anaesthetic in struma

cases is decidedly advised. The patient left the hospital in eight days and has remained in splendid condition.

The third case was a goiter presenting also symptoms of thyroid toxicosis with hypertrophy of both the middle and left lobes, in woman 33 years. The patient was about five months pregnant and extremely nervous and irritable. Besides her tachycardia mostly due to her enlarged thyroid she had a mitral lesion. Novacaine was injected at Troy Hospital and a mass the size of two oranges was removed. The patient was up the second day and home the fifth in fine condition.

Mr. C. Double complete inguinal hernia, each as large as one's fist. Patient injected with novacaine and operated. Patient had not the slightest annoyance during operation and returned to room feeling just as bright as when he went to operating room.

Mr. Mc. Age 20. Very poor physical empyema of left pleural cavity. Respirations very rapid and decidedly in no fit condition to take ether. I should not, however, thought of giving ether for removal of cause no matter what condition case was in. Patient took nourishment one-half hour before operation. Injected novacaine over site of seventh rib and removed four inches of same without slightest discomfort. Evacuated about two quarts of pus. Patient conversed freely and was not in the least more upset than if he was being examined. Patient returned to room and took nourishment immediately. Was sitting up in bed the next day, up around in three days and home in one week. The shock and starvation caused by ether would have kept him in bed for two weeks.

Miss C. Age 43. Large umbilical complicated with epigastric hernia. Her condition for years on account of heart and kidneys contraindicated the taking of ether. On being questioned in consultation, after an annoying attack in which bowel and omentum as large as two fists came out, as to whether I could relieve condition under a local anaesthetic. Immediately assured doctor and family that it could easily be done. Patient went to Troy Hospital. Next day was injected and operated upon. Forty minutes patient was back in her room not having had slightest pain in any way. Large mass of skin and omentum removed. Patient recovered perfectly and could have gone home in two weeks without slightest harm but on account of varicose ulcers remained in hospital an extra week.

Editorial

The King of France was at this time seized with an illness, at which all who loved him were much disheartened; for as no remedy could be found for it, they foresaw that in a very short time he must depart this life; indeed, he himself knew this quite as well as his surgeons and physicians. It was formerly believed

that the King of Navarre, during the time he resided in Normandy, had attempted to poison him, and that, although the attempt did not succeed, King Charles was at the time so much infected with the venom, that the hair of his head and the nails of his hands and feet fell off, and he became as dry as a stick. His uncle, the emperor, hearing of his condition, sent to him his own physician, the most able man of his age, by name George of Prague, who for his immense learning was commonly called a second Aristotle. When this great doctor came to visit the king, who at the time was Duke of Normandy, he knew his disorder, and declared that having been poisoned he was in great danger; however, he performed a most wonderful cure, and so weakened the force of the poison, that he caused the king to regain his former strength. He opened an issue in his arm through which the poison oozed, and prescribed a medicine which was to be made use of constantly.

On his departure the doctor told the king and his attendant that whenever the issue should dry up he would most certainly die; but that at any rate he might live fifteen days or more, to settle his affairs and attend to his soul. The king well remembered these words, and at times they caused him much anxiety; however, he lived for twenty-two years after this occurrence.

SIR JOHN FROISSART

The Chronicles of England, France, Spain, etc.



Parasyphilis of the Nervous System Dr. A. Read Wilson, in the current issue of *Brain*, revises the nomenclature of the parasyphilitic diseases as catalogued by Fournier in 1894 by including primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy in a group with locomotor ataxia, general paralysis, and a combination of these two, taboparesis. Each of these diseases is a degeneration of a primary neuron: tabes dorsalis is the manifestation of a degeneration of the spinal sensory protoneurons; general paralysis, of the cortical association neurons; primary optic atrophy, of the visual neurons; primary lateral sclerosis, of the upper motor neurons; progressive muscular atrophy, of the lower motor neurons.

In all history of syphilis may be attained in the great majority of cases, and in all the same alternative causative factors—alcohol, hard work, exposure—are alleged.

Some cases of primary optic atrophy, primary lateral sclerosis, and progressive muscular atrophy show an extraordinary analogy to the above—extraordinary, that is, if they are to have a different etiology, but natural enough if considered as parasyphilitic manifestations. Many give histories of syphilis, others have signs of syphilis remaining on their bodies, or they give positive Wassermann reactions. Evidences of gross syphilitic lesions, too, are rare, since the primary stages have in most cases been mild. The average interval between syphilitic infection and the appearance of symptoms is about the same as in tabes or general paralysis. The average age incidence is the same, though in primary lateral sclerosis the onset is so gradual that the patients do not seek advice at the commencement. All three are frequently found associated with tabes, less often with general paralysis; cases occur where two of them are associated together, or where multiple combinations are exhibited. About ten per cent. of general paralytics have tabes too (Byron Bramwell, Mott); some four per cent. of general paralytics have primary optic atrophy (Mott); primary optic atrophy is found in from ten per cent. (Osler) to twenty per cent. (Norris and Oliver) of tabetics; and twenty per cent. of tabetics exhibit some form of muscular atrophy (Dejerine). Further, undoubted examples of juvenile primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy exist.

The Wassermann reaction has proved of great importance in the study of these cases. If the central nervous system is not affected, the reaction will usually be positive with the serum, and negative with cerebrospinal fluid. This is natural when we remember that the latter is essentially a secretion. But even in general paralysis the cerebrospinal fluid is very occasionally negative, whilst the serum is positive. Plaut tested both fluids in ninety-five cases of general paralysis, and got a positive reaction with the serum in every case, and in all but one with the cerebrospinal fluid.

In syphilis and parasyphilis there is marked lymphocytosis of the cerebrospinal fluid. This ebbs and flows along with the activity of the disease, and is therefore useful as an index not only to that activity or quiescence, but to the effect of anti-syphilitic remedies, whose exhibition in parasyphilis produces no

good effect on the disease, and no effect on cerebro-spinal lymphocytosis; but in syphilitic meningitis, for instance, as the patient recovers so the lymphocytosis decreases. This lymphocytosis occurs in some other diseases, e. g., sleeping-sickness and herpes zoster, and so cannot be considered absolutely pathognomonic; but its presence is a valuable sign when combined with other facts.

Careful classification of the clinical material permits the following grouping of cases:

(I) *Uncomplicated.*

- (a) Primary optic atrophy.
- (b) Primary lateral sclerosis.
- (c) Progressive muscular atrophy.

(II) *Complicated.*

- (d) Tabes combined with general paralysis.
- (e) Tabes combined with primary optic atrophy.
- (f) Tabes combined with primary lateral sclerosis.
- (g) Tabes combined with progressive muscular atrophy.
- (h) General paralysis combined with primary optic atrophy.
- (i) General paralysis combined with primary lateral sclerosis.
- (j) General paralysis combined with progressive muscular atrophy.
- (k) Primary optic atrophy combined with primary lateral sclerosis.
- (l) Primary optic atrophy combined with progressive muscular atrophy.
- (m) Primary lateral sclerosis combined with progressive muscular atrophy.
- (n) Cases where more than two of the symptom groups are manifested in one individual.

Some of these are comparatively common affections, others are rare, and, although an actual case of primary optic atrophy combined with progressive muscular atrophy is not on record, there is no theoretical reason why it should not exist.

In each of these there is a definite degeneration in brain or

cord, or nerve-trunk which can be anticipated from a knowledge of the symptoms, and can be demonstrated post-mortem.

In (a) there will be degeneration of the optic nerve alone.

In (b) there will be degeneration of the upper motor neurons.

In (c) there will be degeneration of the lower motor neurons.

In (d) there will be degeneration of the spinal sensory neurons and of the cortical association neurons.

In (e) there will be degeneration of the spinal sensory neurons and of the optic nerve neurons.

In (f) there will be degeneration of the spinal sensory neurons and the upper motor neurons.

In (g) there will be degeneration of the spinal sensory neurons and of the lower motor neurons.

In (h) there will be degeneration of the cortical neurons and of the optic nerve neurons.

In (i) there will be degeneration of the cortical neurons and of the upper motor neurons.

In (j) there will be degeneration of the cortical neurons and of the lower motor neurons.

In (k) there will be degeneration of the optic nerve and of the upper motor neurons.

In (l) there will be degeneration of the optic nerve and of the lower motor neurons.

In (m) there will be degeneration of both the upper and lower motor neurons.

In (n) there may be degeneration of any combination of these tracts.

Inasmuch as occasionally early manifestations of syphilis simulate the parasyphilitic diseases, difficulty in determination of the causative factor appears. In a general way the following distinction may be drawn:

PARASYPHILIS

(1) First symptoms not generally noticed till eight to fifteen years or longer after primary infection.

(2) Average age—incidence thirty-seven years.

PSEUDO-PARASYPHILIS

(1) First symptoms noticed less than eight years, and often very soon, after primary infection.

(2) Very many patients are under twenty-five years of age.

- | | |
|--|---|
| (3) Begins usually after all syphilitic manifestations have disappeared. | (3) Tertiary or late secondary manifestations may co-exist. |
| (4) Onset insidious as a rule and progress not very rapid. | (4) Onset often sudden, often determined by an accident, as a fall or a blow, and progress rapid. |
| (5) History of syphilis as a rule shows few and mild early symptoms. | (5) History of syphilis often shows a severe attack. |
| (6) Reaction to anti-syphilitic remedies nil, or injurious. | (6) Reaction to anti-syphilitic drugs marked and beneficial. |

The author cites cases in support of his thesis, and from this investigation derives the following summary:

There is no doubt that in the vast majority of cases of tabes and general paralysis of the insane, syphilis is the essential cause. They are parasyphilitic nervous diseases.

There is evidence that at all events some cases of primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy, are parasyphilitic too. A history of syphilis or a positive Wassermann reaction, and in some instances the post-mortem examination point to this being so.

In tabes and general paralysis there is degeneration of certain neuronic tracts or groups; and degeneration of precisely the same character in other neuronic groups produces primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy.

Combination of all three with tabes or general paralysis of the insane, or with both, or amongst themselves, are so frequent that it is difficult to withstand the conclusion that their essential etiological factor is the same, more especially since it is conceded that syphilis has a great affinity for the nervous system.

If it be allowed that the neuronic degeneration of primary optic atrophy, primary lateral sclerosis or progressive muscular atrophy when combined with that of tabes or general paralysis is due to syphilis, it cannot be denied that such degeneration, occurring uncombined, may still be parasyphilitic.

The Argyll-Robertson pupil is recognized as a symptom of

tabes and general paralysis, in other words, it is a parasyphilitic manifestation. It is found also with primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy.

If the question of antecedent syphilis were carefully investigated in every case of primary optic atrophy, primary lateral sclerosis and progressive muscular atrophy, or better still, if every case were subjected to Wassermann's test as well, an accumulation of evidence, entirely analogous to that obtained in determining the etiology of tabes and general paralysis, would soon be at hand, and these three diseases, at present wandering in the Wilderness of Undiscovered Causes would take their rightful place amongst the rarer manifestations of parasyphilis of the nervous system.

Public Health

Edited by Joseph D. Craig, M. D.

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ABSTRACT OF VITAL STATISTICS, FEBRUARY, 1913.

Consumption	27
Typhoid fever	0
Scarlet fever	0
Measles	5
Whooping-cough	0
Diphtheria and croup	4
Grippe	1
Diarrheal disease	3
Pneumonia	20
Broncho-pneumonia	9
Bright's disease	21
Apoplexy	7
Cancer	14
Accidents and violence	12
Deaths over 70 years	31
Deaths under 1 year	27
 Total deaths	 185
Death rate	24.10
Death rate less non-residents	19.54

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital	II	II
Albany Orphan Asylum	0	0
Child's Hospital	I	I
County House	4	I
Home for Friendless	0	0
Homeopathic Hospital	2	5
Hospital for Incurables	I	I
House of Good Shepherd	0	0
House of Shelter	0	0
Little Sisters of the Poor	5	I
Public Places	3	2
St. Margaret's House	4	I
St. Peter's Hospital	4	7
Austin Maternity Hospital	6	0
Albany Hospital, Tuberculosis Pavilion	4	4
Labor Pavilion	0	0
<hr/>		
Totals.	45	34
<hr/>		
Births.	144	
Still Births	6	
Premature Births	9	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were two hundred inspections made of which fifty-four were of old houses and one hundred forty-six of new houses. There were thirty-eight iron drains laid, fifteen connections to street sewers, fourteen tile drains, one cellar drainer, fifty-four cesspools, sixty-two wash basins, seventy-two sinks, sixty-three bath tubs, sixty-eight washtrays, and eighty-two tank closets. There were sixty-three permits issued, of which forty-nine were for plumbing and fourteen for building purposes. Thirty-one plans were submitted, of which eighteen were of old buildings and thirteen of new buildings. Thirty-seven houses were tested, three with peppermint and thirty-four water tests. Seven houses were examined on complaint and twenty-two were re-examined. Six complaints were found to be valid and one without cause.

BUREAU OF CONTAGIOUS DISEASE.*Cases reported.*

Typhoid fever	2
Scarlet fever	8
Diphtheria and croup	19
Chickenpox.	12

Smallpox	.	.	I
Measles	.	.	167
Whooping-cough	.	.	0
Consumption	.	.	38
 Total	.	.	 247

Contagious Disease in Relation to Public Schools.

Reported D. S. P.
Public School No. 1.....
Public School No. 5.....
Public School No. 10.....
Public School No. 11.....
Public School No. 13.....
Public School No. 14.....
Public School No. 17.....
Public School No. 21.....
St. Joseph's School.....
St. Mary's School.....
Polish School

Number of days quarantine for diphtheria:

Longest..... 24 Shortest..... 7 Average..... 16

Number of days quarantine for scarlet fever:

Longest..... 17 Shortest..... 17 Average..... 17

Fumigations:

Houses..... 41 Rooms..... 132

Cases of diphtheria reported..... 19

Cases of diphtheria reported..... 19
Cases of diphtheria in which antitoxin was used..... 18

Cases in which it was used.....

Deaths after use of antitoxin

TUBERCULOSIS

Bender Laboratory Report on Tuberculosis

Positive.	2
Negative.	10
Total.	12
Living cases on record February 1, 1913.	29
Cases reported during February:	
By card	29
Dead cases by certificate.	7
	—
Total.	33

Dead cases previously reported.....	20
Dead cases not previously reported.....	7
Recovered.	1
Removed.	8
	— 36
Living cases on record March 1, 1913.....	296
Total tuberculosis death certificates filed during February.....	27
Out of town cases dying in Albany:	
Albany Hospital	0
Albany Hospital Camp.....	4
Hospital for Incurables.....	1
	— 5
Net city tuberculosis deaths.....	22

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of new cases assigned.....	15
Cases remaining from previous month.....	29
	—
Total.	44
Disposition of old and new cases:	
Died.	7
Transferred to hospitals.....	3
Refused to be visited.....	2
Remaining under supervision.....	32
Number of visits made.....	266

BUREAU OF PATHOLOGY.*Bender Laboratory Report on Diphtheria.*

Initial positive.	15
Initial negative.	157
Release positive.	10
Release negative.	35
Failed.	18
	—
Total.	235

Test of Sputum for Tuberculosis.

Initial positive.	6
Initial negative.	21
Failed.	1
	—
Total.	28

BUREAU OF MARKETS.

Market inspections	102
Public market inspections.....	10
Fish market inspections.....	6
Fish peddler inspections.....	3
Hide house inspections.....	3
Packing house inspections.....	2
Rendering plant inspections.....	1

MISCELLANEOUS.

Inspections of mercantile establishments.....	193
Mercantile certificates issued to children.....	12
Factory certificates issued to children.....	9
Children's birth records on file.....	21
Number of written complaints of nuisances.....	8
Privy vaults	1
Closets.	0
Plumbing.	2
Other miscellaneous complaints.....	5
Cases assigned to health physicians.....	77
Calls made	163
Number of dead animals removed.....	306

Society Proceedings**MEDICAL SOCIETY OF THE COUNTY OF ALBANY**

Semi-annual meeting of the Medical Society of the County of Albany, held at Parr's Hotel, October 16, 1912.

Prior to the meeting the members gathered at table and enjoyed a clambake. There were present Dr. Neuman, the president, and Drs. Applebee, Bedell, Blessing, Booth, Corning, Classen, Crounse, Curtis, Davis, Devoe, Douglass, Doescher, Edwards, George Griffin, Gutmann, Hawn, Happel, Hinman, Harper, Hun, Hurst, Houghton, Babcock, Jenkins, Keens, Kemp, LaGrange, Lempe, Lewi, Lomax, Lochner, Lipes, Murray, Myers, McDuffy, Papen, Geo., Sr., Papen, Geo., Jr., Pelton, O'Donnell, Pitts, Root, Riggs, Rooney, Rulison, Smelzer, Shelden, Sautter, Traver, Vander Veer, J. N., Van Hoesen, Wiltse, Washburn.

At the close of the feasting the president called the members to order in business session.

On motion the minutes of the previous meeting were accepted as printed in the ANNALS.

The Comita Minora gave a verbal report of its meetings.

Dr. Rooney read his address as vice-president, which was ordered printed in the ANNALS and spread in full upon the minutes.

On motion the thanks of the Society was tendered to Dr. Rooney for his very able address.

The president called attention to the meetings to be held in the State Educational building in the interests of public health and announced that the Albany County Medical Society and the Homeopathic Medical Society of Albany would have joint charge of the meeting on the 24th inst.

The president announced the resignation of Dr. Boyd as a member of the Milk Committee and the appointment of Dr. Cook as his successor.

After some informal remarks on methods for improving the meetings of the Society a motion to adjourn was duly carried.

E. E. HINMAN, M. D., *Acting Secretary.*

A regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College Wednesday evening, November 20, 1912.

Meeting was called to order by President Neuman. Those present were: Drs. Bartlett, Berry, Bedell, J. L. Bendell, Branan, Classen, Cook, Conway, Corning, Curtis, Doescher, Donhauser, Druce, Fromm, Egerton, Gutmann, C. W. L. Hacker, Hannock, Harper, Haswell, Harrig, Herrick, Hinman, Houghton, Hun, Jenkins, LeBrun, Lempe, Lewi, Lawyer, Lyons, MacFarlane, Merrill, Jerome, Meyers, Mount, Murray, Lanahan, O'Leary, Jr., G. W. Papen, Sr., G. W. Papen, Jr., Rooney, C. W. Moore, Morrow, Fred Myers, Smelzer, Mosher, J. N. Vander Veer, Van Slyke, Ward, White, Stanton (Schenectady), and President Neuman.

Dr. T. F. DOESCHER was elected secretary pro tempore in Dr. Draper's absence.

Motion made and seconded that minutes of last meeting be approved as printed. Carried.

Moved and seconded that Dr. May of Dutchess County be transferred to this Society. Carried.

New Business: Concerning the Medical Inspection of schools.

Dr. ROONEY said that the Board of Education of Albany had passed a resolution adopting medical inspection of Albany schools, and that the Board of Estimate and Apportionment had appropriated \$6,000 for this purpose. The plan as heard by Dr. Rooney was to provide for one inspector and four nurses. The former was to receive \$2,500 to \$3,000 a year and the nurses from \$700 to \$750 each. He had heard that it was to be an our of town man who could operate on the eye, ear, nose and throat. Dr. Rooney said that one man giving fifteen minutes to each child would take four years to cover the ground once. There are 12,000 children in the public schools and 5,000 in parochial schools. One inspector would have three and a quarter minutes for each child each year. The nurses were to make the diagnosis and select the children for the inspector's special attention. Dr. Rooney called attention to the fact that there was voluntary inspection in the city in 1907; that the work was approved by the late Mr. Cole and was recommended by the Board of Education to the Board of Estimate and Apportion-

ment for an appropriation. The latter never came and as a result the work fell through. Dr. Rooney thinks the proposed plan as outlined is inadequate and that the real work would fall on other doctors than the inspector.

Dr. LEWI moved that a committee of five be appointed by the president to confer with the Board of Education in regard to school inspection. Seconded and carried.

Dr. MACFARLANE said that he thought the subject of enough importance to warrant considerable discussion. That the committee mentioned in the last motion should represent the attitude of the entire society and not merely their own views. He thought that more time ought to be given to a careful consideration of the entire subject and that it ought to be discussed at a later date. To this end he moved that Dr. Lewi's motion be laid on the table. Motion not seconded.

Dr. JENKINS said that Scranton had recently appointed twenty inspectors and paid them \$500 a year each.

Dr. BARTLETT thought that a special meeting should be set aside for the discussion of so important a matter.

Dr. MACFARLANE then renewed his motion to lay the original motion on the table. Seconded by Dr. Bartlett. Motion lost.

Dr. HINMAN said that it would be a farce to put school inspection in the hands of one man. He also thought that nurses could not make diagnosis.

Dr. BEDELL said that we have had five years to think this thing over and therefore to-night's action is not hasty.

Dr. RULISON said that the system of inspection in 1907 was not a failure—that it was highly praised in the booklet describing Burton's ideal method of school inspection. He also said that in his opinion members of this Society should be allowed to attend to the matter of school inspection.

Dr. CORNING felt that a committee ought to investigate the matter very carefully before the society committed itself to any line of action.

Dr. WARD, in order to get an expression of the opinion of the Society, moved that it is not wise to trust school inspection to a single man. Seconded and carried.

Scientific Program

"The Treatment of Exophthalmic Goitre with High Frequency Currents," Dr. W. J. Lewi.

Discussion

Dr. WARD said that as far back as 1877 he had used galvanism and sea salt packs in the treatment of this disease. He had seen some of the patients under Dr. Lewi's care and says that they showed remarkable improvement.

Dr. BARTLETT said that he used to use galvanism in exophthalmic goitre but now uses the high frequency current. He thinks that if we influence the sympathetic we benefit indigestion, constipation and nervousness. He says that these cases were all improved by galvanism and are still

more benefited by high frequency. That by using the latter currents we get higher amperage into the body and that the electricity enters the plasma of the cell itself.

Dr. STANTON, of Schenectady, said that he thought that exophthalmic goitre must be a disease with a tendency to self-limitation and a tendency to cure itself—that a study of the life history of different cases is necessary. Dr. Stanton and his colleagues have tabulated a series of 3,000 cases that have been followed two years or more and the following conclusions were reached:

1. If followed long enough it is self-limited as regards thyrotoxicosis.
2. In spite of treatment sixty per cent are cured or satisfactorily improved.
3. In the treatment there are three factors that are very important: (a) Rest; (b) Time; (c) Immediate (curative) effect of excision.

He says that surgeons cure seventy to seventy-five per cent—medical men cure sixty per cent, and if we follow the latter long enough it approaches seventy-five per cent. The advantage of surgery is that it is immediate. The mortality is not high. The excision of the sympathetic has not affected the course of the disease and therefore he thinks that a small number of cases should not be accepted as proving that the sympathetic nerve fibres are an important factor in the disease known as exophthalmic goitre, or that treatment of the disease through these fibres is curative.

Dr. HUN said that Claude Bernard supported Kerber in the theory of the sympathetic origin of exophthalmic goitre. The pathologists do not support this. Electricity does change certain of the symptoms of goitre, as he has proved on his own cases with galvanism. He can not see how, if the sympathetic is secondarily affected electricity can be of benefit if the toxic secretion of the gland is constantly poured out.

Congestion of the eye alone, as in the case of thrombosis of the cavernous sinus does not cause exophthalmus.

Medical means cure many cases. If medical means fail after a reasonable time, the only satisfactory cure is through excision. The treatment of goitre by electricity is very old and has some cures to its credit. He thinks that it may help the condition till it is spontaneously cured but he does not believe that electricity in itself actually cures.

Dr. LEMPE described a case he saw some time ago where simple handling of an enlarged thyroid gland caused tremendous swelling of the entire body, but particularly of the face, hands and neck.

Dr. LEWI closed the discussion by saying that as far as he knew no one had previously advanced the theory of sympathetic influence on exophthalmic goitre, and that he could present cured cases to prove the efficacy of the treatment he advocated.

"Treatment of Uric Acid Diathesis by Electricity," Dr. E. A. Bartlett.

"Electro-diagnosis," Dr. J. Montgomery Mosher.

"Stereoscopic Radiography," Dr. John M. Berry.

Meeting was adjourned upon motion after which a buffet lunch was served.

T. F. DORSCHER, M. D., *Secretary, Pro Tempore.*

A special meeting of the Medical Society of the County of Albany was held December 30, 1912.

Meeting called to order by President Neuman at 8.45 p. m. The following members were present: Drs. Drake, A. J. Bedell, Classen, Lewi, Griffin, Curtis, Goodwin, Traver, Bibby, Murray, D. V. O'Leary, Jr., Babcock, Sheldon, Lyons, Bellin, Rooney, Conway, Cook, Haswell, Lanahan, Rulison, C. H. Moore, Gutmann, Hale, Bristol, Draper.

PRESIDENT: This special meeting is called in accordance with the by-laws, the call having been regularly signed by ten members of the Society. It is called for a discussion of the medical inspection of public schools of the city of Albany and to receive the report of the committee appointed by the president to investigate this subject.

The first order of business is the report of the committee on medical inspection of schools. I would say in passing that, as you know, any one who speaks will not be permitted to speak again until all those who wish to partake in the discussion have done so, unless by special permission.

Dr. ROONEY: I move that the Society receive the report of the committee.

Dr. CURTIS: I should like first to make a simple preliminary statement. The committee had two meetings to discuss the matter. One of these we held at Dr. Lochner's office, so as to secure the attendance of a very busy man, and he made his appearance at about eleven o'clock. At the second meeting Dr. Lochner made his appearance at about eleven o'clock, after the rest of the committee had gone. Succeeding the first meeting, the committee having been invited so to do, went before the Board of Education and reported to them that as they had had but a few days to consider the matter, they were not prepared to make a recommendation, and the Board very courteously gave us two weeks more to inform ourselves more in detail. At our second meeting we received a communication signed by fifteen members of the Society, to the effect that we request the Board of Education to defer the hearing for a month. This communication was transmitted to the Board of Education. We appeared before the Board at the adjourned meeting which they had fixed, and before making any statement we asked them for a decision upon the request that had been forwarded. The Board declined to defer the matter further as they desired to close it up. We then proceeded to present a report, and that report was left with the Board. Dr. Lewi has secured a copy of it and, as requested will read it.

REPORT OF COMMITTEE ON MEDICAL INSPECTION OF SCHOOLS

Medical School Inspection

1. The Purpose and Scope of the Work:

First—To detect physical defects in school children and to some extent correct them, such as eye strain, difficulty in hearing, disease of the nose and throat, and of the skin; imperfections of the teeth, in-nutrition, orthopedic defects, and mental and nervous disorder, which

would interfere with one's educational advancement or that of his associates—the end sought being to secure educational efficiency in the public schools.

Second—Maintenance of hygiene in the schools—the general health of the pupils.

Third—The detection and exclusion of Parasitic and Contagious from the schools, and to see that the school Vaccination law is enforced.

2. How Can This be Effected:

At the outset of the work and of each year, require a certificate of health from the parents of each child, on a card for the purpose, from the family physician. Perhaps one-half of the children will be taken care of in this way, and part of such reports will be satisfactory; they should be subject to review by the chief medical inspector. (This is the proposition of a prominent educational official.) Some parents will prefer this to the examination of public officers. It is reasonable to believe that the majority of the school children are without defect; about twenty per cent were found lacking in the inspections made by physicians in this city in 1908.

How to Reach and Care for the Defectives:

Defective children have to have technical study, and infectious children must to some degree be passed upon by a physician. (There should be one chief medical inspector; he should have charge of and be responsible for the entire work; and assistant medical inspectors, the number of whom can be determined later, as well as the amount of time they give to it.) The chief should give all his time to the work; if he has no diverting interests, is given a reasonable salary and a definite term of service, he will fit himself for it, make it a career, and become efficient for the work. He should know general medicine, pediatrics, the specialties including nervous diseases and orthopedics, and should be or make himself proficient in school hygiene. He needs administrative capacity and personality, tact for dealing with teachers and parents and acceptability to the physicians of the city; he should be competent to instruct teachers and nurses along the lines special to school inspection. Such a man could meet the purpose and scope of the work; he could secure a grasp of the entire field and adjust the work to the points needing it as they develop. He would personally direct it at acute points of contagious outbreak, making the schools efficient help to the control of communicable disease, and gradually he would get possession and record of the individual defects of the subjects of his oversight. He and his assistants should be appointed on competitive examination.

How shall we discover the defectives and the infectious among school children?

In the immediate instance by the teachers; they each are in direct contact with a limited number of pupils and know every one intimately. To make teachers more effective in this they should receive instruction from the chief medical inspector. They can also be discovered by the

chief and by medical assistants. Trained nurses will be needed to follow up cases and other work as may appear necessary to the chief medical inspector.

The public schools are the chief medium for the spread of measles, scarlet fever and diphtheria, as well as of parasitic diseases; the inspection can also be made the means for their control. But for effectiveness the developing case must be arrested at the very outset before it is allowed to mingle with others, and no one is available for this immediate detection but the teacher. An exposed school would call for more well-trained watching and this in that case would have to be done daily.

It is not to be expected that this kind of work done along these lines would find itself put into full operation from the very start. An effective man would find his way into it and getting control of the needs, develop the resources for meeting them, and eventually what is aimed at by the good work of medical school inspection would be brought to realization. There is reason to believe that not a little of what is now being done elsewhere is to a degree disappointing because it is perfunctory; there is doubtless to be anticipated better results because of the more interested work following some such plan as this.

(Signed) F. C. CURTIS,
Wm. G. LEWI,
F. L. CLASSEN,
A. J. BEDELL.

PRESIDENT: You have heard the report of the committee. What is your pleasure?

Dr. ROONEY: I move that the report of the committee be accepted. Seconded by Dr. Rulison and carried.

Dr. CURTIS: Is there any question up before the house?

PRESIDENT: There is not and can not be.

Dr. CURTIS: I would like to say as a member of the committee a little regarding my own relationship to it. I do not fully agree—

PRESIDENT: I do not wish to interrupt, but I would rule that unless some motion is made a discussion would really be out of order; and I should be very glad to entertain a motion on the subject.

Dr. CURTIS: I rise simply to a question of privilege. If this august body will bear with me a little—

PRESIDENT: The chair will be glad to hear Dr. Curtis.

Dr. CURTIS: The report is made to appear to indorse the appointment of medical examiners as assistants to the chief, but there is no question on the part of any of us with regard to the propriety of appointing one chief inspector. I have heard no objection to that from any source. The propriety of it is apparent, and I think that one man giving his entire time to the work, and having no diverting interests, can inform himself of the needs of the work and of the field of the work, familiarizing himself with the individuals who are under his care and generally securing a grasp of it, which is quite impossible under any other conditions, thus

serving the purpose of the educational work and that of the city better than any other plan can. I know no one who differs from that. One question that came up before our committee was "Who shall assist this chief in his work?" Our members of the committee were urgent that they should be medical officers. A considerable number of men with whom I have had conversation—members of the Society—have expressed an opinion to me that medical assistants would be less fruitful of efficient work than suitably trained nurses.

PRESIDENT: You bring up the question of personal privilege. I would rule that a point of privilege is a question in which your personality does not enter.

Dr. CURTIS: I am trying to give my reason—

PRESIDENT: That should be included in the report or some motion.

Dr. RULISON: I move, if Dr. Curtis will accept my view, that he be allowed to present a minority report.

Dr. ROONEY: I rise to a point of order. This meeting is called for the purpose of receiving the report of the committee, and discussing it. I do not think it is a question of personal privilege. Medical inspection of the public schools—

PRESIDENT: I rule that you are out of order. A discussion must be preceded by a motion before the house. It is moved by Dr. Rulison and seconded by Dr. Haswell that Dr. Curtis be allowed to make a minority report.

Dr. ROONEY: I rise to a point of order. This report has been received and adopted, and there is no reason for a minority report, as all members of the committee have signed it, with the exception of Dr. Lochner who is not present.

PRESIDENT: The chair would rule that it is the province of the County Society to decide whether a minority report should be made.

Dr. GUTMANN: Is there a motion before the house?

PRESIDENT: There is a motion before the house.

Dr. LEWI: I would say in regard to Dr. Rulison's motion that Dr. Curtis be allowed to make a minority report. That, our report to you, Mr. President, is not a report to the Society; it is a report we have presented to the Board of Education. That has been done and can not be changed.

Dr. RULISON: I withdraw the motion.

Dr. GUTMANN: I move that the report as adopted be transmitted to the Board of Education. Seconded by Dr. Rooney.

PRESIDENT: Are you ready for the question?

Dr. CURTIS: I return to my question of privilege. I can not make a minority report if the report has been accepted. But I think it is quite competent for a body of this sort, without departing too far from technical usages, for one of the committee to make a statement under the head of a question of privilege. I do not mean to differ from the Chair, and I would not for a moment. I feel too highly honored in every way. But I would like to make myself clear as to my position

in the matter. As I was saying, we do not differ in the matter of committing this work to one chief medical inspector. What I proposed to the committee to report was this: That such an inspector be appointed; that no assistants of any sort be appointed at the outset; that he find out for himself what sort of assistants he needs, and then whatever he so finds let him be supplied with. I think we are proceeding along new lines. We are not disposed to adopt in the proximity of 1913 anything that has been tried in the preceding years of the twentieth century even. There is no man, as I have been able to ascertain, who is perfect in the matter of medical inspection of schools. Certainly none of them has been more criticised in written books and by those with whom I have conversed who are familiar with the matter—none has been more criticised than the inefficiency of part-time medical inspectors. I can easily see from my own point of view, having concentrated my thought on it for these weeks, that a medical chief of sufficient capacity could undertake this work, could instruct school teachers to do the preliminary work of finding, by salient features, infectious diseases, and by their experience defective children, and put them in a class by themselves. I do believe that many of them could be eliminated by the home inspection done at their homes. I believe that a trained nurse who is fitted for her work, and gives her whole time to it, would do better work than a great many medical inspectors. Her range of work would be very much wider; she would aid the inspector in his work; she would follow the cases; she would explain the educational work to the home and reach the parents, she would make effective that which we always want to make effective—the betterment primarily of instruction; she would make the children more patient, and she would recognize, certainly as well as any mother of a family, the presence of such diseases as measles, the presence of anemia, feebleness and backwardness, which do not require diagnosis. It is not a question of that. She could certainly do a lot. Now whether a single man giving his whole time to it will be sufficient to do that which is required, is a question I do not think I can answer, and therefore I desire to report what I have. But I do not believe that ten per cent of the children need medical inspection; they certainly do not need weekly, monthly, or more than yearly inspection. Supposing he does not treat the cases. It would not be desirable or well that he should; it would involve the difficulty. In many ways, I believe that the outlining the work along the line of one chief man, than having him find out his needs, would be the proper course.

Dr. ROONEY: I tried to bring to mind in connection with this question about which there has been so much talk, the maxim of Omar Kayam, who when confronted by a multitude of opinions, and after rejecting many, said that in the field of conjecture only those are different who have different opportunities of observation. I feel that in this work, most of the talking has been done, not by those who have observed, but by those who have followed an old and feeble attitude, sitting down

and whirling the thing around in their own minds and arriving at opinions. When this question was brought up I felt that in many ways the thing had been done rather peculiarly. It had always been my impression that as a member of the Medical Society of this county, which is the representative body of a county in the leading State of the Union, any matter which pertained to the public health was a part of its own right—in fact, was part of its own duty, as forced upon it by its own article of incorporation. I felt that any matter which pertained to the public health should have its origin within the County Society. In this matter the procedure of the present and the procedure of five years ago, which was such a lamentable failure, differs to a surprising degree. My own attitude in the matter has been one of endeavoring to a complete and absolute fairness. I refused to accept an appointment on this committee; I refused to accept the chairmanship of this committee, because I wished the decision of this committee to be a judicial one. I told this committee that I was honored by being invited to appear before it; that whatever their conclusions were I was heartily in accord with them, and my whole future conduct has been shaped in the same manner. Now to come down to "brass tacks." When the question was first discussed I sent a telegram to three men in this country who unquestionably had the largest experience; and when I say experience I do not mean familiarity with the literature, but actual experience. These men were Dr. Thomas F. Harrington, of Boston, Dr. Walter S. Cornell, of Philadelphia, and Dr. John J. Cronin, of New York.

The telegram sent to these men was as follows:

City of 100,000 instituting medical inspection of schools. 12,000 children. Appropriation \$6,000. (1) How many inspectors needed? (2) Whole time or part-time? (3) Appropriate salary for chief inspector? (4) For assistant inspectors? (5) Best method of choice, competition, examination, or appointment by Board of Education?

The replies were as follows:

Appropriation sufficient one chief, hours nine to four, \$3,000. Two assistants, hours nine to twelve, \$900 each. One nurse \$800. Supplies \$400. Best method of choice, competitive examination by representative medical examining board, on a basis of general medicine and pediatrics 25, school hygiene 25, administration medical inspection 20, previous education 10, personality 20.

(Signed) WALTER S. CORNELL.

You should have one chief inspector at a salary \$3,000 a year, appointed upon his record, past experience, etc. One assistant inspector at \$1,200 per year for each 2,000 children. Assistants should be appointed through municipal civil service. All should be part-time men.

(Signed) JOHN J. CRONIN.

Ten part-time inspectors each \$500. Chief inspector \$1,500. Civil service appointment by Board of Education.

(Signed) THOS. F. HARRINGTON.

Only one of these answers mentioned the proposition of nurses, and

that man mentioned only one nurse. The number of inspectors, eleven by Dr. Harrington down to four by Dr. Cornell. I also had the pleasure of hearing Mr. Jones speak before the Board of Estimate and Apportionment on this matter. He states—and I hope I quote rightly—that the other method had been tried in Rochester. I want to quote a letter I received from a physician in Rochester who has no connection with the school inspection there.

The letter reads:

Since talking with you on the 'phone, I have made inquiry and find that I misinformed you on some points. Last January the following changes in the system as I gave it to you were made.

There are thirteen physicians who daily visit two or three schools apiece, each making about sixty physical examinations a week, at a salary of \$900 a year.

Three nurses work under their direction at \$840 a year salary and the health officer informs me that two more will be added soon in order to carry on the increasing work. The appointments are made by the Commissioner of Public Safety at the suggestion of the health officer under whose supervision they work.

I might add that the present system is perfectly satisfactory.

I then asked Mr. Jones whether it was true or not that the plan that they advocated, a chief medical inspector and four nurses, was in practice in any city or town in the United States with more than 1,000 school children in the schools; and he admitted that he did not know. The main factor in medical inspection is not a question of education; it is a question of the protection of the health of the school children and a saving to the community. If a reasonably safe inspection of infectious and contagious diseases is to be had, it certainly can not be by nurses. The point I wish to make is this: If this is going to be medical inspection it should be medical inspection and not nursing inspection. I feel that the committee has presented a perfectly fair and honest report. I feel that we should at least place ourselves on record as supporting our own committee and having the courage of and the right to our own opinions.

Dr. RULISON: I should like to discuss this question of school inspection from two or three standpoints. I should like to reply to certain statements of Dr. Curtis, who has spoken of the work of school teachers in detecting backwardness in school children, and I think we ought to have some definition as to what constitutes backwardness. Backwardness may be of two kinds; there may be a backwardness due to a lack of mental development and there may be backwardness due to physical causes. Backwardness due to mental development, while it concerns us medical men has also a pedagogical aspect. A child may be said to have three ages; the physiological age, which concerns its stature, its mentality and its development in general; the normal child of five years will correspond to the mental development of the standard for that age; the chronological age, which also takes into consideration

the development of the child in reference to its age, possibly from a physical standpoint; the pedagogical age, which is determined by various tests. These tests consist of a number of set questions which are asked the child. They determine the child's perception, judgment and various psychological considerations. Now I have studied this question at some little length, and I find that in most places this particular part of school inspection is conducted by the educational authorities. I am sorry that Dr. Curtis has left because I wanted to ask him some questions. Dr. Curtis seems to think that a nurse could do this better than the teacher, who is in contact with the pupil and is supposed to have some training in this thing, which is purely pedagogical or purely educational. A trained nurse who has had no training in this respect at all is expected to know more about this than the teacher. Also she is supposed to know more about this than the physician, who might be expected, as a scientific man to give this subject some study. That is one aspect of the question of school inspection that I wanted to speak of. The second is the follow-up work of the trained nurse. Now, as attending physician to the South End Dispensary, and as attending physician to the milk committee, I have had considerable experience with follow-up nurses. Some of the work they have done has been extremely intelligent and has shown some results. Other parts of the work has been of absolutely no value. I have had to keep after the nurses, so to speak, continually in some cases. They have not given reports of the conditions I wanted to know about. As to their influence on the parents, I want to say that that is absolutely the work of the physician. In some cases the parents resent the instructions of the nurse and feel that she is taking a position she is not warranted in doing. They feel that she is distinctly an intruder, and I feel that in a great many cases her presence has been a harm rather than a help in the matter. I say that conscientiously and honestly, and my statement is based on five or six years' experience. Now, as regards measles, anemia, feebleness, backwardness, etc., I believe that the nurses coming to my clinic are reasonably intelligent nurses. I feel that the Guild nurses in this town are very much more intelligent, so far as the examination of children is concerned than the average hospital graduate, for the very simple reason that they have had much more experience. I should like to say that these nurses have had much more experience in the examination of children than any other nurses in town, with the possible exception of the nurses at St. Margaret's. These Guild nurses constantly refer surgical cases to my clinic; they refer skin cases, and I believe they are absolutely incompetent to discriminate between cases of any sort. Now, there is another thing Dr. Curtis has said—that children do not require frequent examination. As regards mental backwardness I agree with him heartily. As regards contagious diseases, it has been shown that in one of the schools of this city diphtheria carriers are very, very prevalent. If we had an epidemic of scarlet fever—we have not had one in three or four years, but it is bound to come—do you think for one minute that a nurse is competent to diagnose a case of incipient scarlet fever? Would they

be competent to differentiate between an early case of scarlet fever and a case of simple tonsilitis? In the same connection, they are absolutely incapable of distinguishing anemia in children, which is one of the most deceptive things in children's diseases that I know of. I have discussed this from one standpoint, the fitness of nurses for this school inspection work, which was not my primary object. I should like very much to give in some little detail the history of this school inspection movement if the Society would permit me, and I think it would be very profitable.

PRESIDENT: The question is, Dr. Gutmann moves that the report of the committee be transmitted to the Board of Education.

Dr. GUTMANN: If there is no objection I should like to withdraw the motion.

PRESIDENT: Is there any objection? Hearing none, it is so ordered.

Dr. LYON: I move that the report of the committee be submitted to the Board of Education. Seconded by Dr. Haswell.

Dr. ROONEY: I would move that as an amendment the additional words "as approved by the Medical Society of the County of Albany" be added. Seconded by Dr. Conway. Amendment carried.

PRESIDENT: The original motion is that the report of the committee on school inspection be transmitted to the Board of Education of the city of Albany.

Dr. GUTMANN: I move that the question be tabled. Seconded. Lost.

Original motion carried.

Meeting was adjourned upon motion.

EDWIN L. DRAPER, *Secretary.*

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK.—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR FEBRUARY, 1913.—number of new cases, 171; classified as follows: Dispensary patients receiving home care, 13; district cases reported by health physicians, 5; charity cases reported by other physicians, 59; moderate income patients, 76; metropolitan patients, 18; old cases still under treatment, 225; total number of cases under nursing care during month, 396. Classification of diseases for the new cases: Medical, 46; surgical, 11; gynecological, 5; obstetrical under professional care, mothers 40, infants 40; throat and nose, 1; infectious diseases in the medical list, 27; surgical list, 1. Disposition: Removed to hospitals, 9; deaths, 13; discharged cured, 101; improved, 32; unimproved, 19; number of patients still remaining under care, 222.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 6; nurses in attendance, 5; patients carried over from last month, 1; new patients during month, 7; patients discharged, 8; visits by head obstetrician, 15; visits by attending obstetrician, 0; visits by students, 50; visits by nurses, 83; total number of visits for this department, 148.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,692; for professional supervision of convalescents, 583; total number of visits, 2,275; cases reported to the Guild by 1 health physician, and 51 other physicians; graduate nurses 9, and pupil nurses 5 on duty.

Dispensary Report.—Number of clinics held, 86; new patients, 137; old patients, 366; total number of patients treated during month, 503. Classification of clinics held: Surgical, 12; nose and throat, 6; eye and ear, 15; skin and genito-urinary, 9; medical, 12; lung, 11; dental, 0; nervous, 0; stomach, 0; children, 12; gynecological, 9.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—A regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College, Tuesday, March 4, 1913, at eight-thirty o'clock. Scientific Program—"Two Cases of Pancreatic Lesions with Presentation of Patients," Dr. Jerome Meyers and Dr. E. G. Benson; "Effects of Exertion on Angina Pectoris with Report of a Case," Dr. F. L. Classen; "Oxygen-Nitrous Anaesthesia," Dr. H. H. Drake.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—A regular meeting of the Medical Society of the County of Schenectady was held at the County Court House, Tuesday evening, March 11, 1913, at eight-thirty o'clock. The following papers were read: "The Prognosis of Exophthalmic Goitre, a Study of Medical and Surgical End Results," Dr. E. MacD. Stanton; "Functions of Ovaries and Testicles Other than Reproduction," Dr. W. M. Clark; "Addison's Disease," Dr. S. S. Ham.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.—The sixty-ninth annual meeting of the American Medico-Psychological Association will be held June 10, 11, 12, and 13, 1913, at the Clifton Hotel, Niagara Falls, Canada.

SUMMER COURSE IN MUNICIPAL SANITATION, HARVARD UNIVERSITY.—During the summer of 1913 the University will offer courses relating to the general subject of municipal hygiene and sanitation. Studies are arranged with special reference to those who are teaching these subjects in other institutions and who would like to obtain a practical demonstration of the principles of sanitation applied to actual problems.

The work will begin on June 30, and will close August 9, 1913, covering six weeks of lectures, laboratory work and field work.

FEDERATION OF STATE MEDICAL BOARDS.—The annual meeting of the Federation of State Medical Boards was held Tuesday, February 25, 1913, at the Congress Hotel, Chicago, Ill.

The following papers were presented: "Should Medical Board Require One or More Years of College Work?" Dr. Isadore Dyer; "Should an Internship be Required?" Dr. William J. Means; "Rules and Regulations Governing Examinations," Dr. John M. Baldy; "Universal

Reciprocity," Dr. Beverly D. Harison; "Methods of State Board Record Keeping," Dr. Herbert Harlan; "Qualifications of Examiners," Dr. P. H. Tatman; "Means of Keeping Politics Out of State Board Affairs," Dr. J. N. McCormack; "What Fee Shall be Charged for Examinations?" Dr. Charles H. Cook.

THINK ELLIS ISLAND PASSES FEEBLE-MINDED.—The State Board of Charities in making recommendations to the governor for enlarging the facilities for caring for defectives in this State lays special emphasis on the fact that it is generally conceded that the facilities at Ellis Island for discovering the feeble-minded who seek to enter there, are entirely inadequate and that this matter must be given primary consideration.

THE ANTIVIVISECTION BILL.—The McClelland Antivivisection bill was promptly defeated this year.

MEDICAL EXPERT TESTIMONY.—The committee on Medical Expert Testimony of the New York State Medical Society has caused to be introduced into both houses of the State Legislature the following proposed bill:

AN ACT to amend the judiciary law, in relation to examining physicians.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Article two of chapter thirty-five of the laws of nineteen hundred and nine, entitled "An act in relation to the administration of justice, constituting chapter thirty of the consolidated laws," is hereby amended by adding at the end thereof a new section, to be section thirty-one, to read as follows:

Sec. 31. Examining Physicians. In a criminal action or proceeding or in a special proceeding instituted by the state writ of habeas corpus or certiorari to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.

Section 2. This act shall take effect immediately.

This bill has been most carefully drawn by an expert on constitutional law at the instance of the committee. The expert who drafted the bill has taken into account the laws of all the other States and the decisions regarding them where declared unconstitutional.

It is his opinion that this bill will stand the constitutional test. He further believes that it is wiser to use it as an amendment to the judiciary law than to have it enacted as entirely new legislation.

It is sincerely hoped by the committee of the State Society that the profession of the State of New York will endorse this bill and stand back of it with a solid front. The abuses of medical expert testimony have been and are shameful. The committee deem it the better part of wisdom to confine its efforts to having the bill enacted covering only criminal cases.

The bill was introduced in the Senate on March 17th by Senator Walters of Onondaga, and in the Assembly on the same date by Assemblyman Daly.

PURE MILK BILL.—At the request of Governor Sulzer a bill was recently introduced in the New York State Legislature creating a Milk Commission to take over certain duties of the Department of Agriculture and to be charged with the execution of all laws relating to the production, manufacture, storage, transportation and sale of milk. The board is to be composed of a Milk Commissioner with a salary of \$7,000 a year, the Commission of Health of New York City, and the State Commissioner of Agriculture. The board will have the power to fix standards of purity for milk and to regulate its sale in every particular.

PRIZES OF THE INTERNATIONAL CONGRESS.—On the occasion of the XVIIth International Congress at London next August, three prizes will be awarded: The Prize of Moscow commemorating the XIIth Congress, of the value of 5,000 francs, will be awarded for work in medicine and hygiene or for eminent services rendered to suffering humanity; the Prize of the XIIIth Congress of Paris, having a value of 4,000 francs, will be bestowed for original work during the past ten years bearing upon medicine, surgery, obstetrics, or the biological sciences in their application to medical science, and the Prize of Hungary instituted to commemorate the XVIth Congress, of 3,000 francs, will be given for a notable piece of work in medical science which has appeared in the interval since the last Congress. Nominations of candidates for these prizes are invited before June 1, 1913, and should be sent, together with examples of the work on which the candidacy is based, to the "Bureau de la Commission permanente des Congres internationaux de medicine, Hugo de Grootstraat 10, The Hague.

HOSPITAL NOTES.—The Mountain Sanatorium, Binghamton, has been turned over by the City Hospital to the Health Commissioner of the city.

The State Hospital Commission emphasizes the crowded condition of the hospitals for the insane in its annual report, giving a total shortage at the close of 1912 of 4,800 beds. The total number of insane in the State as given is as follows: men, 16,271; women, 17,702.

LEGISLATURE GETS RECOMMENDATION OF HEALTH COMMISSION.—Governor Sulzer has sent a message to the Legislature embodying the

recommendations advised by the special commission appointed to investigate health conditions in this State. Among the recommendations made are the abolition of town and village boards of health and the substitution of a State system of sanitary supervision; fixing the term of the State Commissioner of Health at six years and his salary at \$10,000 instead of \$5,000 as at present; that he must be either a physician or a recognized authority on public health work and should not be permitted to practice medicine or have any other occupation. It is advised that there be created a State Public Health Council of seven members, including the Commissioner of Health, the Commissioner of Labor, one commissioner or other health officer of a city of the first or second class, and three members to be appointed by the governor. This council should have authority to adopt public health regulations but should not have executive, administrative or appointive powers. The State Commissioner should exercise supervision over local health authorities and be charged with the enforcement of public health laws. The State should be divided into at least twenty sanitary districts with an expert supervisor in each district. Local officers should be charged with continuous supervision of their districts, examination of school children, inspection of schools and other public places, popular education as to public health and with securing full registration of births and deaths. There are also suggestions in regard to child hygiene, working conditions, registration of vital statistics, etc.

STATE SHOULD AID TUBERCULOSIS FIGHT.—The State Board of Charities has issued a formal statement to the effect that the State should establish district hospitals for the care of incipient and curable cases of tuberculosis. The board believes that it is absolutely necessary for the State to put forth much greater efforts looking to the relief of suffering and the prevention of the spread of contagion if the disease is ever to be overcome. These proposed district hospitals should be on the Ray Brook plan and the care of less promising and advanced cases should be left to local authorities. This plan would permit of enlarged facilities for the care of all classes of tubercular patients and of a most desirable classification which it now seems impossible to secure in the smaller local institutions.

PERSONALS.—Dr. WILLIAM J. SWART (A. M. C. '98), for the past fourteen years a medical missionary in Siam has resigned this position and is now located at 1015 State St., Schenectady, N. Y.

—Dr. EDWARD A. STAPLETON (A. M. C. '04), after post-graduate study in Germany has begun practice limited to diseases of the eye, ear, nose and throat at 211 State Street, Albany, N. Y.

—Dr. ZENAS V. ORTON (A. M. C. '07), has removed from Newburgh, N. Y., to 339 Avenue B, Schenectady, N. Y.

—Dr. ROSSLYN P. HARRIS (A. M. C. '08), has left Athens, N. Y., and is now at 447 Warren St., Hudson, N. Y.

—Dr. EDWARD D. DONOHUE (A. M. C. '09), has removed from Mechanicville and is now located at Schuylerville, N. Y.

DIED.—Dr. MINOT A. STEELE (A. M. C. '90), a member of the Rhode Island Medical Society, medical examiner of Portsmouth, N. Y., died in Newport, February 17th, from erysipelas following the bite of a dog about two weeks before, aged 45.

—Dr. DEWITT M. LAMOREE (A. M. C. '70), died at his home in Los Angeles, California, February 12, 1913, aged 63.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Internal Medicine. By DAVID BOVAIRD, Jr., A. B., M. D., Assistant Professor of Clinical Medicine, College of Physicians and Surgeons of Columbia University; Associate Visiting Physician of the Presbyterian Hospital, and Visiting Physician of the Seaside Hospital, in the City of New York. With 109 illustrations and 7 colored plates. Philadelphia and London: J. B. Lippincott Company. Price \$5.

Many practitioners, most teachers and no doubt all students will agree with the author of *Internal Medicine* when he says in the preface: “* * * The large treatises are too long, too rich in information for those entering upon the study of medicine, while many of the shorter works are mere catalogues of facts. It has seemed to the writer, after many years’ teaching, that there was a distinct need both among students and practitioners of a work which should give in compact form the more important facts of the subjects included in the domain of internal medicine.” The title of Bovaird’s work was chosen, he states “in recognition of the need of a term which shall denote those subjects left of the older ‘practice of medicine’ when all the specialties have been subtracted from it, those subjects which are, after all, the fundamentals of our study.” Yet he includes the diseases of the nose, larynx, pharynx and tonsils which distinctly belong to the specialist, and diseases of the esophagus and the stomach which if not already appropriated by the stomatologist from the little hoard of that steadily diminishing class, now lightly referred to as the “general practitioner,” are held with a very slight degree of tenuity.

The arrangement of subjects is in the main a good one for it takes up the simpler diseases first, going on to the more complex ones later. The general classification is as follows: Diseases of the respiratory tract, digestive system, kidneys, circulatory system, blood and ductless glands; Constitutional diseases; Intoxications and miscellaneous diseases; Infectious diseases; Diseases caused by animal parasites; Diseases of the nervous system and an Appendix which contains articles

on the general care of the sick, standard diets and a table of equivalent weights and measures.

The most attractive point about the book from the standpoint of the teacher is that while it is an example of well arranged condensed information, yet the condensation is not at the expense of clearness, a fault all too frequent in the generality of books prepared for the use of students.

S. L. D.

A Manual of Pharmacy for Physicians. By M. F. DE LORME, M. D., Ph. G., Assistant Professor of Materia Medica and Pharmacology, Long Island College Hospital. Third edition with nineteen illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Price \$1.25 net.

Knowledge is certainly of value to every one, and the more of it that a physician possesses the better qualified he should be to practice medicine, but to ask the medical student to use time which he should devote to the study of medicine in acquiring a very superficial and incomplete acquaintance with a profession which is struggling for existence against the combined assaults of modern business methods and the manufacturing drug houses, is asking him to pay entirely too high a price for his, to him, not very valuable information.

Whatever may have been the case in the days when the doctor was also the dispensing chemist, pharmacy has no place in the medical curriculum of to-day. If it had and if the study of pharmacy were necessary for the physician this book could not be commended, for it is nothing more than a compilation of titles and subjects from the Pharmacopoeia and the National Formulary with the addition of a section on prescription writing.

S. L. D.

A Text-Book of Medical Diagnosis. By JAMES M. ANDERS, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and L. NAPOLEON BOSTON, M. D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6 net; half morocco, \$7.50 net.

This work combining as it does in its authorship a man who has already written a noted work on clinical medicine with another who has written an equally good book on laboratory diagnosis would seem in its inception to predicate success. Nor do our expectations fail of realization.

The subject matter is well arranged, the descriptions of the various diseases are clear and accurate, the various features well indicated by marginal headings in black faced type. Many of the diseases are further illustrated by case reports.

The book abounds in tables of differential diagnosis. Stress is also laid upon methods of laboratory diagnosis where this is possible. As it is strictly a work on diagnosis any discussion of treatment is entirely omitted.

The illustrations are very numerous and unusually clear and to the point. Many of them are made from photographs of patients. There are several colored plates. The authors have, however, fallen into the error of using photographs of the nude female figure in various poses, instead of using diagrams or the male figure, upon which to indicate points in superficial and regional anatomy, pain—and percussion—areas, etc.

In short, this work can be highly recommended as one which contains in one well illustrated volume, which is not unwieldy in size, all that is essential to the diagnosis of disease in a form which strikes a happy medium between the brief over-condensed description of some books and the prolix, over-detailed wandering text of others.

C. K. W., JR.

Therapeutics, Materia Medica, and Pharmacy, including the Special Therapeutics of Diseases and Symptoms, the Physiological and Therapeutical Actions of Drugs, the Modern Materia Medica, Official and Practical Pharmacy, Minute Directions for Prescription Writing, also the Antidotal and Antagonistic Treatment of Poisoning. By SAM'L O. L. POTTER, A. M., M. D., M. R. C. P., Lond., formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco, Author of the "Quiz-Compends of Anatomy and Materia Medica," "An Index of Comparative Therapeutics," several articles in Foster's "Practical Therapeutics," and "Speech and its Defects;" Late Major and Surgeon of Volunteers, U. S. Army. Twelfth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1912. Price \$5 net.

In the preface to this latest edition, the author announces "that the additions amount to the large number of 530 including many absolutely new articles. The sections on serums and vaccines has been rewritten and enlarged and obsolete matter has been deleted." The publishers in quoting the above say that they quote it "with the object of pointing out the author's indefatigable efforts to keep it up with the latest developments of science that it may merit in the future the same remarkable success it has had in the past."

As an example of perfected, complete and reliable text-book of the old type that was popular when medicine was even less of an exact science than it now is; when it was the fashion of the general practitioner to look in the section on therapeutics for the disease which he believed his patient to be afflicted with, there to find a list of the various drugs which were recorded as having at one time or another been used in such cases, this book is unexcelled. As a "household

cyclopedia" on medicine, as a book to properly replace the once popular volumes such as "The Home Treatment of Disease" and books with similar titles, it should certainly take first rank, but, as a modern, scientific work on therapeutics, *materia medica* and pharmacy, for which polygamous marriage of sciences there is to-day no excuse, it can not be recommended.

S. L. D.

Principles of Hygiene: For Students, Physicians, and Health Officers.

By D. H. BERGEY, M. D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition thoroughly revised. Octavo of 529 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth \$3 net.

Recent advances in hygienic knowledge have been by no means neglected by Bergey in the fourth edition of his very excellent treatise on the principles of hygiene. The present day ideas regarding water and sewage purification have had adequate recognition and due consideration is given to our almost totally changed opinions as to the conveyance of and prevention of typhoid fever. The discussion of quarantine and of isolation and disinfection are alone of sufficient value for one to commend the work for the student, while the revision of the chapter on immunity is adequate.

S. L. D.

Pharmacology and Therapeutics for Students and Practitioners of Medicine. By HORATIO C. WOOD, JR., M. D., Professor of Pharmacology and Therapeutics in the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital; second Vice-Chairman of the Committee of Revision of the U. S. Pharmacopoeia. Philadelphia and London: J. B. Lippincott Company. Price \$4.

In no branch of medical teaching has a more marked change taken place than in the ones which we now group together under the title of pharmacology and therapeutics. The first author to fully realize this change and to undertake to thoughtfully and practically set it forth is Horatio C. Wood, Jr.

Doctor Wood's published studies in pharmacology, such as his research work on ergot, his record as a teacher, his reliability as an investigator and his position on the revision committee of the U. S. Pharmacopoeia would entitle his efforts to careful consideration even if the excellence of his book was not so marked as it really is.

The classification employed, which is one quite different from the routine ones in vogue, takes up after a preliminary chapter in which is a most admirable discussion of the student's *bête noir*, incompatibility, drugs used to affect secretion, to affect the nervous system, to affect circulation, to affect the alimentary tract, to affect metabolic processes,

drugs acting on causes of disease, extraneous remedies and drugs of minor importance.

Each of these chapters is divided into classes and again sub-divided into individual drugs and each drug, after describing its physical properties, origin and preparation, is considered as to its physiological action, therapeutics, toxicology and administration.

Another and valuable innovation is that at the end of each division is added a complete bibliography. It is intended that hereafter this shall be the text-book used in the Albany Medical College.

S. L. D.

A Text-Book of Obstetrics, including Related Gynecologic Operations.

By BARTON COOKE HIRST, M. D., Professor of Obstetrics in the University of Pennsylvania. Seventh revised edition. Octavo of 1013 pages, with 895 illustrations, 53 of them in color. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$5 net; half morocco, \$6.50 net.

That this work has recently undergone its sixth revision since its appearance in 1898 is significant. As a text-book, it has no superior. This edition requires no extensive review.

In the sixth edition there appeared a chapter devoted to diseases of women and their surgical treatment. Believing that these conditions, the majority of which are consequences of child-bearing, are the natural concern of the obstetrician, consideration of them is included in the present edition. Special attention has been given and new material added to diseases of the breast. The author describes a new hydrostatic cervical dilator which should prove a valuable addition to the obstetric armamentarium.

The book is invaluable as a text for the student and an adequate reference work for the general practitioner for the following reasons: the subject-matter is condensed; facts are stated concisely; use is made of many and well-chosen illustrations; and general discussions are not indulged in, when possible the theoretical yields to the practical.

P. T. H.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis.

By Eminent Specialists. Edited by WALTER L. PYLE, M. D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Fifth edition, revised and enlarged. 12mo. of 516 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth \$1.50 net.

Practically the only change in this (fifth) edition of Walter L. Pyle's book is the addition of a chapter on food-adulteration and deterioration by Dr. Harvey W. Wiley. If anything were needed to make this a practical and valuable book for the non-medical reader, for whom it is

intended, this chapter of Doctor Wiley's would supply the deficiency, and it is a great pleasure to be able to once more commend this book to the general public.

S. L. D.

Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By VILRAY PAPIN BLAIR, A. M., M. D., Professor of Oral Surgery in the Washington University Dental School, and Associate in Surgery in the Washington University Medical School. With 384 illustrations. St. Louis: C. V. Mosby Company, 1912.

The great value of special treatises upon certain limited subjects of medicine and surgery has long since been clearly demonstrated and nearly all the important regions of the body as well as nearly all of the more important diseases have been exhaustively presented in this manner. In recent years there has not been a thoroughly comprehensive and practical presentation of the surgery of the diseases of the mouth and jaws made until this work appeared. It is a subject of great importance and entitled to rank with any of the regionary studies of the body. In this volume of 638 pages the author presents the result of a large amount of labor and study and has given to the medical profession a scholarly and at the same time practical presentation of all the essential facts connected with the subject. Splendid judgment has been shown in gathering from the literature all that is really worth while and in omitting much that might have increased the size of the volume but decreased its value and efficiency. The subject-matter is subdivided into forty chapters, necessarily more or less brief, but comprehensive. The illustrations of which there are 384 are especially to be commended both for their illumination of the text as well as the excellence of their execution. Much bad surgery has been and is still being done on the mouth and jaws largely because the treatises upon surgery do not pay sufficient attention to the subject and partly because of the lack of exhaustive special volumes upon the subject. No surgeon who is called upon to treat diseases of the mouth and jaws can afford to be without this volume and we feel that the author is entitled to the gratitude of the entire medical profession for a real addition to surgical literature.

A. W. E.

LARYNGOLOGY, RHINOLOGY AND OTOLOGY

Edited by Clement F. Theisen, M. D.

A Case of Otogenous Brain Abscess, Operation, Recovery (Ein Fall von operativ geheilten otogenen Hirnabscess).

HAMMERSCHLAG. *Wiener medicinische Wochenschrift*, No. 12, 1912.

The following case presents some unusually interesting features: The patient, a woman, aged 57 years, had had diabetes for fifteen years. In October, 1911, she developed a right-sided acute otitis media which

ruptured spontaneously. In spite of the resulting profuse discharge from the ear, she did not improve, the severe pain continuing and a slight swelling developed in the region of the mastoid process. A few days later some slight cerebral disturbances appeared, and at that time the author was first called to see the case. He found the patient confused mentally, speaking in an irrational manner. A symptom was noticed at this time which persisted up to the time of operation. It consisted of convulsions, very much like Jacksonian seizures, coming on about every fifteen minutes. During the convulsive attacks, the head was invariably turned sharply to the left and kept in this position for a half minute. The eyes were also turned to the left, and a marked horizontal nystagmus to the left was always noticed.

The patient was sent to a hospital in Vienna, and was observed there by the writer for a number of days before operation; the urine at this time contained 7.1 per cent sugar and the convulsive seizures occurred every five minutes, with movements of the left hand, the symptoms pointing to a lesion of the right hemisphere. Otherwise the examination of the nervous system was negative as was also the examination of the eyes.

Two days before operation a symptom developed which neither at the time nor later at the operation, could be explained. Occasionally the head and eyes turned to the right with a nystagmus to the right during the attacks. Complete cortical blindness came on at this time. The author believed that all the symptoms could best be explained by an abscess in the temporal lobe, although Jacksonian attacks are rare in abscesses in this part of the brain. Hammerschlag has collected 195 cases of abscess of the temporal lobe from the literature and this symptom was present in only six. Redlich, Epstein and Stauder have reported cases of diabetes in which similar brain symptoms were present.

At the operation the entire mastoid process was found softened, some of the cells containing pus. No defect could be found anywhere in the tegmen antri.

The temporal lobe was then exposed and the dura was found to be tense, with no pulsation. Far anterior, corresponding to the position of the aditus ad antrum a fibrinous deposit was found on the dura. The brain was entered at this point and at the depth of 1 cm. pus was found in considerable amount.

The further course of the case was favorable. On the following day the patient was already much more rational. The movements of the head and eyes to the right remained away permanently, and the patient finally left the hospital entirely well.

The Spread of Bacterial Infections.

A. LOGAN TURNER. *Annals of Otology, Rhinology and Laryngology*, December, 1911.

The general scheme of the investigations is as follows: A table is given in which the various organismal infections which may have a primary focus in the nasal and nasopharyngeal cavities, are considered.

A. From the nasal and nasopharyngeal cavities to the cerebrospinal meninges

- (a) Suppurative meningitis (pyogenic organisms).
- (b) Influenzal meningitis (Pfeiffer's bacillus and allies).
- (c) Pneumococcal meningitis (the pneumococcus).
- (d) Epidemic cerebrospinal meningitis (the meningococcus).
- (e) Acute poliomyelitis.
- (f) Tuberculous meningitis (bacillus tuberculosis).

B. From the nasal and nasopharyngeal cavities to the cervical lymphatic glands.

Glandular enlargement and pulmonary disease (bacillus tuberculosis).

While the chief function of the various meningeal spaces with the fluid contained within them has been long regarded as serving as a protection to the brain against alterations in pressure, anatomists in more recent times have looked upon them as lymph spaces. Schwalbe first demonstrated by injection of the subdural space paths of communication between it and the olfactory mucous membrane, the perilymphatic space of the labyrinth, and the perichoroidal space. Key and Retzius by injecting the same region were able to follow the injection into the lymphatic vessels, which left the skull through the jugular foramen and carotid canal. They were also able to inject from the subdural space lymphatic vessels in the nasal mucous membrane. Flatau was able to inject the lymphatic vessels of the nasopharynx from the subarachnoid space. Cuneo and Andre have succeeded in young human subjects in injecting a lymphatic network in the pituitary membrane from the meningeal spaces, the vessels traversing the cribriform plate by small canals which are independent of the small olfactory nerve branches. This lymphatic network would appear to belong exclusively or almost exclusively to the olfactory region, and in this way resembles the similar extensions into the inner ear and the globe of the eye.

Our knowledge of the arrangement and distribution of the lymphatic apparatus of the accessory sinuses is still very meagre, and we are unable to give any descriptive account of them.

In Gerber's classical monograph, "Die Komplikationen der Stirnhöhlenentzündungen," published in 1909, 160 cases of intracranial complication secondary to frontal sinus inflammation have been collected and carefully analyzed. Of twenty-eight cases of extradural abscess, one reported by Gyselynck and Mayer was regarded as probably due to infection by way of lymphatic channels. The case was one of acute frontal sinus inflammation due to streptococcal infection. The sinus walls at the operation showed no defect. As the patient recovered, proof is wanting as to the exact manner of the infection. In fifty-one cases of purulent leptomeningitis and fifteen cases of thrombophlebitis none were ascribed to lymphatic infection. In only one of sixty-six cases of brain abscess was the infection regarded as propagated by the lymphatic vessels. The case which was published by Hoffmann was one of chronic bilateral frontal sinus suppuration complicated with abscesses of

streptococcal origin in both frontal lobes. A perforation of the posterior osseous wall was found in the right frontal sinus, but Hoffmann regarded the lymphatics as the path of infection to the left frontal lobe from the left frontal sinus. Unfortunately no microscopic examination was made.

It is obvious, therefore, that the conclusive proof of intracranial infection by pyogenic organisms from the nose by way of lymphatic vessels requires more direct evidence than has yet been obtained.

The author considers pneumococcal and influenzal meningitis together.

Both Fränkel's pneumococcus and Pfeiffer's bacillus may be found together in the nasal secretion, and the latter has been found in a few cases of meningitis, sometimes alone and sometimes in association with pyogenic cocci. Pfühl is of the opinion that in these cases the path of infection to the brain is directly through the roof of the nasal cavity. Although meningitis due to both of these organisms may result from a blood infection there is evidence of direct meningeal infection from the nasal, postnasal, and accessory nasal cavities. As proof of this statement it is not necessary to do more than cite a few illustrative cases. It is true that the same difficulty which was found in proving a lymphatic connection in pyogenic affections is again encountered here, and we are forced to assume rather than bring proof of the exact pathway of infection. Weichselbaum has drawn attention to the possibility of the inflammation spreading from the meninges to the nasal cavities. In the cases of primary acute meningoencephalitis investigated by Weichselbaum from which the pneumococcus was cultivated, the same organism was found in the nasal accessory sinuses and middle ear cleft in four instances.

Meningitis due to Pfeiffer's influenza bacillus, although not common, is now well recognized. Pfühl was the first to demonstrate the presence of the bacillus in the meningeal exudate. Dubois has collected eleven cases of meningitis in which the bacillus was present, and many other cases are recorded. The question of the portal of entry of the bacillus influenza into the central nervous system has been much discussed. E. Fränkel is an advocate of the hypothesis that the bacilli are conveyed by the lymphatics of the nasal mucosa through the cribriform plate directly into the cranium.

In summarizing the second part of the subject the connection between the nasal and nasopharyngeal lymphatics and the rest of the body, as exemplified by the invasion of the tubercle bacillus, the writer states that further investigation is necessary.

Certain anatomic and clinical facts, however, must be regarded as proved. The lymph drainage of the upper air passages passes through the cervical chain of glands and enters the large veins at the root of the neck; the tracheobronchial glands derive their afferent vessels from the mucous membranes of the lower respiratory passages and pulmonary alveoli, while their efferent vessels pass to the large veins at the root of the neck and enter the blood stream. No efferent vessels have been demonstrated between the deep cervical and the tracheobronchial glands.

Both experimentally and clinically it has been shown that tuberculous disease of the cervical lymphatic glands may be derived from infection of the nasal and nasopharyngeal mucosa by the tubercle bacillus. As to the manner in which the bacilli pass from the cervical glands to the lungs two explanations have been offered: first, by way of the deep efferent cervical lymph vessels discharging into the thoracic duct upon the left side of the neck, and on the right side through the right lymphatic duct into the large veins, thence by the right side of the heart and pulmonary artery to the lungs; secondly, by an extension of the inflammatory process from the diseased inferior deep cervical glands directly to the pleura and apex of the lung. Experimental evidence has been brought forward in support of the extension of the tuberculous disease by the first or anatomic pathway, but we have failed to bring forward pathologic postmortem data in support of direct extension from the cervical glands to the apex of the lung.

The fact that more than one portal of entry exists in the upper air passages increases the difficulty in estimating the actual part played by the nasal and nasopharyngeal lymphatics in distributing infection. Tubercle bacilli may be inhaled into the lungs and the cervical lymphatic glands may be secondarily infected by the bacilli in the sputum entering through the pharyngeal lymphoid tissue.

PEDIATRICS

Edited by Henry L. K. Shaw, M. D.

Purpura in Infective Diarrhea.

H. D. ROLLESTON and J. B. MOLONY. *British Journal, Diseases of Children, January, 1912.*

One hundred cases of infective diarrhoea consisted of 56 males and 44 females whose ages averaged about 8 months. Of the total number 67 proved fatal and 33 recovered. There were 11 cases that showed purpura and they were all found in the fatal list. None of the purpuric cases showed oedema. In eight of the fatal purpuric cases the eruption was seen in the skin of the abdomen especially below the umbilicus. The hemorrhagic areas were usually small but set close together. In one case where there was a large extravasation into the skin of the thorax, the *Bacillus enteritidis Gærtner* was isolated in pure culture. The purpura appeared usually late in the disease, on the average a week before death. The appearance of the symptom bore no relation to the injection of horse or other serum. Judging from the fact that all of the purpuric cases were fatal the appearance of the symptom renders the prognosis grave in any case.

ALBANY MEDICAL ANNALS

Original Communications

OBITUARY SKETCH OF WILLIAM HAILES, M. D.

*Presented at a meeting of the Faculty of the Albany Medical College,
April 19, 1913,*

By ALBERT VANDER VEER, M. D.

Dr. William Hailes was not so far along in years as to be called old, yet I fancy there are a number of the present faculty who know very little of his early life and professional career.

I remember him, together with Dr. George Tilden, as really the very last of the students registered in Dr. Alden March's office. Soon after graduation Dr. Tilden moved to Omaha, Nebraska, became very successful in the practice of his profession there, and retired on a very competent fortune some two years ago.

Dr. Hailes retained, somewhat, the characteristics of association with Dr. March. In some ways he was not unlike him—rather quick in diagnosis, and almost abrupt in presenting his views.

His education, previous to his entering the Albany Medical College, bore the stamp of Professor Anthony's instruction, the latter having a great affection for the doctor. It will be remembered that Professor Anthony had a malformation in the form of spina bifida, situated somewhat low down in the lumbar region. After Dr. Hailes graduated he became Professor Anthony's physician, and he soon developed a sincere admiration for the doctor's professional skill. Dr. Hailes possessed much mechanical ingenuity and succeeded in developing a form of support and covering that was of great service to the professor. The latter at one time expressed to me in a very profound manner the gratitude he felt towards Dr. Hailes for the comfort he had afforded him in the care of his case. This respect and love for

the doctor on the part of Professor Anthony, continued in the most delightful manner until the latter's death. In his will he remembered Dr. Hailes in a very substantial manner, and, as is well known, gave a moderate sum to the Albany Medical College to establish the "Anthony professorship of Pathological Anatomy." More and more frequently is gratitude on the part of patients being expressed in this manner. One has but to consider the number of gifts that have come to our medical colleges and hospitals in this country, for the past few years, to realize the force of this statement.

Much of Dr. Hailes early work was done in the old hospital where the exactness and cleanliness were not greatly above the average of such institutions at that time. Dr. March's surgical clinics conducted on Saturday from ten A. M. to one P. M., came to us as an inheritance, and in securing material for the same Dr. Hailes was of great assistance. He could always be relied upon to aid in any case of sudden accident, and it was not infrequently the custom in those days to adjourn a didactic lecture at the college and send the class over to the hospital to witness the care of such patients. Graduates of that period have since frequently spoken of the benefit they derived from these emergency clinics, and I must say in some respects I regret the change that has come with our present methods of instruction.

My first connection with the college as a teacher began in 1867, and after the death of Dr. March the chair of anatomy was assigned to Dr. Haskins and myself. My portion was that of general or minute anatomy, in which histology was an important portion, also a part of descriptive anatomy. Later, after the death of Dr. Armsby, when the writer was assigned to the chair of surgery, Dr. Hailes took up the subject of histology, making use of not only the famous Woodward slides, which were of so much value at that time, but adding largely to this collection, and his screen lectures were very popular for several years. This method of object teaching was very valuable, but later was supplanted by work in the laboratory, where proper facilities were afforded, especially in connection with the Bender Hygienic Laboratory. The older methods passed away, but one meets with many of the students of that day who often refer to the former lines of instruction with a hearty endorsement of the same.

At a time when there were no laboratory facilities connected with the college Dr. Hailes made a virtue of necessity and improvised from the odd spaces found in the college building a moderate amount of room in which he was able to make use of his microscopes, being among the first to teach laboratory methods of histology and bacteriology, as well as much that pertained to the modern pathology then developing. He spent some time abroad and became a great admirer of von Recklinghausen and Reindfleisch, forming an acquaintance with some of their assistants which lasted for many years. In the experimental stage of this form of teaching in the college he illustrated his knowledge with various appliances that assisted very materially in the instruction of the students. Dr. Hailes' loyalty to the college remained exceedingly steadfast, and he always endeavored to bring before the students all the valuable material it was possible for him to control. He was always exceedingly enthusiastic about his work and while he was sometimes erratic in his methods, yet in the main he accomplished very much to be admired.

In connection with the use of the telephone I can remember his coming to my office one morning, having arranged a very delicate contrivance for attachment to the handle of the searcher for examining the bladder, in relation to vesical calculus, and which was of service.

When the Roentgen rays were first presented to the profession Dr. Hailes became very earnest in endeavoring to bring the subject before the medical students. In this he was encouraged by the faculty and was among the very early instructors in this department.

When it became necessary for me to relinquish a portion of the chair of surgery, for five lectures and a clinic each week were more than I could well attend to, fractures and dislocations were assigned to Dr. Hailes, and he entered into the presentation of this subject with a vim and willingness that soon made a good impression.

The evolution going on in surgical methods, regarding technique, etc., were many, and during this period of great interest to us all, but the exactions required bore rather heavily upon the patients. At this point Dr. Hailes sometimes wavered a little regarding the preparation of the zone of operation, the

surgeon's hands, and change of clothing. Aseptic surgery, later aseptic technique, was at times a little hazy to him, and perhaps a little difficult to carry out. This was sometimes noticed before the students, but he was a quick operator, his patients did uniformly well, and he was given a name, not unlike similar ones given to other members of the faculty, i.e., "lucky Billy."

When it was finally decided to make an effort to secure a location, and erect new buildings for the Albany Hospital, no one was more faithful and gave more liberally in proportion to his ability than did Dr. Hailes, and he was as happy as anyone of us when once this had been accomplished.

When the subject of intubation was first presented it was evidently soon to relieve us of our fearful experiences in the operation of tracheotomy. The writer had some instruments made and presented the subject upon a cadaver at one of the meetings of our County Medical Society. Dr. Hailes was then full of physical vigor, at once grasped the situation and soon became the one individual whom most of the members of the medical profession in Albany and vicinity sent for day or night, for in this line of work he was an expert.

The doctor was very fond of travel and often spent his vacations in taking short coast trips, or going abroad. What he brought from his journeys abroad he used to good advantage in his lectures and various methods of teaching.

Dr. Hailes was very fond of a good story and did not fail to communicate such to his patients as the opportunity offered.

One of the most interesting conversations I ever had with Dr. Hailes was in relation to a call he had made upon Dr. Oliver Wendell Holmes, at the latter's invitation, and who fired questions at him for nearly an hour regarding the use of the microscope, and the understanding of microorganisms, subjects that were just then playing such an important part in suppurating wounds and infectious conditions.

It can truly be said that he did his work with earnestness, that he was faithful in the care of his patients, and although ill for a period of nearly ten years in all that time many of his patients remained loyal to him. During this time he did a certain amount of office work, and at all times remained cheerful, even amidst the most depressing circumstances.

Dr. Hailes was possessed of that rugged bravery peculiar to such men as Dr. March, who not only would bear much suffering themselves but occasionally inflict it upon their patients.

In the beginning of his sickness the writer was called upon to do a severe surgical operation upon Dr. Hailes, in which he declined to take any anaesthetic, holding himself thoroughly under control, and was about in a few days attending to his patients, when the great majority of our profession would have had quite a long convalescence.

He was a good supporter of his profession in the matter of charges, and collection of fees in keeping with his surgical work.

Dr. Hailes had much of the boy about him all through life. He did not seem to mature into the stolid, old New Englander.

His professional appointments, both in college and hospital, and his recognition in the various medical societies by his associates, has been referred to in other eulogies.

Dr. Hailes was an uncut, precious stone, doing his work in life well.

BENDER HYGIENIC LABORATORY

REPORT OF THE DIRECTOR FOR THE YEAR ENDING AUGUST 31, 1912.

By HARRY S. BERNSTEIN, M. D.

To the Trustees of the Bender Hygienic Laboratory:

GENTLEMEN.—I have the honor to submit to you my report for the year ending August 31, 1912.

I. ORGANIZATION.

Dr. Thomas Ordway was granted a leave of absence from October, 1911, to June, 1912. He resigned in April, 1912, to become physician-in-charge of the Huntington Hospital of the Cancer Commission of Harvard University. Dr. Harry S. Bernstein was appointed his successor on April 27, 1912. Dr. Bernstein had been associated with Dr. Ordway as his first assistant for almost two years; and the excellent system introduced by Dr. Ordway, whereby "any vacancy could be automatically

filled by the next in rank" permitted the work of the laboratory being carried on uninterruptedly. Accordingly, Dr. Ellis Kellert became first assistant, and Dr. Wardner D. Ayer (Albany Medical College, 1910) who was the pathological house officer of the Albany Hospital became second assistant. Dr. William D. Allen (Albany Medical College, 1910) was appointed third assistant; and Dr. Jim B. Jupp (Toronto School of Medicine, 1910) served as fourth assistant from October to December 19, 1911. He resigned to engage in private practice. Dr. John F. Southwell continued as a part-time assistant.

Dr. Walter C. Fox (Albany Medical College, 1911) succeeded Dr. Ayer, July 1, 1912. Dr. Kellert resigned April 15, 1911, to become resident house-physician of the Huntington Hospital of Harvard University. Dr. Allen resigned July 1, 1912 to become assistant to Dr. Edgar A. Vander Veer. The laboratory is grateful to Drs. Kellert and Allen for their efficient services.

The staff at present is as follows:

Director—Harry S. Bernstein, M. D.

First Assistant—Clinton P. McCord, M. D.

Second Assistant—Wardner D. Ayer, M. D.

Pathological House-Officer—Walter C. Fox, M. D.

Part-time Assistant—John Southwell, M. D.

Dr. McCord received his appointment June 22nd to take effect September 1, 1912. He holds a Bachelor's and Master's degree in Psychology and Pedagogy and a Medical degree from the University of Pennsylvania (1912). Dr. Southwell, as part-time assistant, devotes the morning hours to teaching. He has also been of great help in filling special needs in the routine. By having him as a "reserve" assistant, the laboratory has suffered no setback whenever a vacancy arose through sickness, vacation, or retirement.

II. THE WORK OF THE LABORATORY.

The work of the laboratory in the routine examination of specimens is summarized in the following table:

TABLE
OF ROUTINE EXAMINATIONS MADE AT THE BENDER HYGIENIC LABORATORY FROM SEPTEMBER 1, 1911 TO AUGUST 31, 1912.

	Albany Hospit'l	St. Peter's Hospit'l	Child's Hospit'l and St. Mar. garet's House	State Dept. of Health	City Dept. of Health	Homeo-pathic Hospit'l	All other sources	Total
General bacteriological and clinico-pathological examinations.....	1,779*	138	19	9,274	3,064	111	932	15,313
Surgical specimens....	1,298	588	40	.....	.....	140	251	2,317
Post-mortem examinations.....	15	.....	7	.....	.....	2	46	70
Total.....	3,092	726	66	9,274	3,064	253	1,229	17,700

Corrected total number of specimens examined..... 16,546.....

General bacteriological and clinico-pathological examinations.—The work considered under this heading has tripled the record of previous years. The total of 9,274 examinations made for the State Department of Health exceeds all previous records by several thousands. The vast majority of these examinations are simple laboratory procedures which consists of making a smear preparation and staining it appropriately. The following tabulation indicates the number of special tests which require far more time and labor than the diagnostic examination of stained smears:

Inoculation tests	64
Wassermann-Noguchi tests	412
Blood cultures	29
Autogenous vaccines prepared.....	15
Milk examinations	25
Total.....	545

The large number of examinations has afforded an experience of extreme diversity to the laboratory staff. Many interesting and unusual cases have been encountered. These include positive blood cultures supplemented, in many instances, by positive urinary cultures. A noteworthy case is that of a primipara who had a postpartum septicaemia of a severe character. From her blood and urine, a pneumococcic-like organism was isolated.

* 1,154 should be subtracted from the bacteriological total for the Albany Hospital. This figure represents the diagnostic work, chiefly for Pavilion G, which is included under City Health work.

The white count at first was subnormal, and gradually rose as improvement set in. The *Bacillus Pyocyaneus* was also recovered by ureteral catheterization from a case of acute renal infection.

The Wassermann-Noguchi reaction for syphilis has aided in clearing up "border-line" cases as well as doubtful or suspicious histological pictures. Our experience with the reaction justifies the conclusion that the examination of spinal fluid is essential in determining the etiology of affections of the nervous system. Cases have presented themselves in which the blood reacted negatively, and the spinal fluid positively. The spinal fluid, moreover, lends itself readily to chemical and cytological examinations which control the complement fixation test.

As in the past, also, the laboratory has made bacterial counts of samples of certified milk for the Milk Committee of the Albany County Medical Society. These examinations have been made free of charge.

Surgical Specimens.—The total number of specimens amounts to 2,317, and exceeds that of last year by one. Permanent record of each specimen is kept which includes a gross description and microscopical diagnosis. There is consequently an accumulation of many records and microscopic slides which are available for statistical study. The value of the records, however, is limited by the lack of sufficient clinical data. It is rare when the slips which accompany the surgical specimens contain other than the name of the patient and source of the tissue. Spaces for the filling in of clinical data, such as the diagnosis, the duration of the disease, or symptoms are entirely disregarded. Repeated attempts to arouse the cooperation of the attending surgeons and house-staffs have been futile. The desired information, if furnished, would make the records complete. These would then offer unusual opportunities for statistical and prognostic study. Albany, as a surgical centre, attracts patients from the surrounding country, the population of which is fixed. These patients, therefore, form a more constant factor for subsequent investigation than the floating population of the larger centres.

The variety of surgical lesions has embraced rare affections. The observation of the ova of *Ascaris lumbricoides* in the lumen of an appendix led to the discovery of the adult worms in the stools. A few cases of *Oxyuris vermicularis* in the appendix

have also been encountered. The most varied types of histological malignancy have been met with in tumors of the breast, genitalia, and thyroid. Particularly noteworthy are two uteri in which a multiplicity of tumors occurred. In one, there was an adeno-carcinoma and malignant leiomyoma; in the other, there was an adeno-carcinoma, leiomyoma, and perithelial angio-sarcoma. The detailed account of these rare cases will form the basis of a paper.

The laboratory is indebted to Dr. William H. Kelly for a generous supply of animal material. This material has served to emphasize the close analogy between human and animal diseases, and has included varied infections of bacterial origin and tumors. Among the latter may be cited an epidermoid carcinoma, which involved the hard palate and the superior maxilla of a prize horse. An interesting congenital malformation was found in a Blenheim spaniel. The stomach, spleen, and one-third of the intestinal tract had gained admission into the left pleural cavity through an opening in the diaphragm.

Post-mortem Examinations.—The number of post-mortem examinations shows a marked decrease. The laboratory is now rarely called upon to perform autopsies for the coroners' physicians. It is evident from the preceding tabulation that almost three-quarters of the post-mortem examinations have been conducted for physicians on private cases. This is significant. Appeals for the determination of pathological processes meet invariably with approval when they come from the physician, to whom the patient while living was entrusted. Many of the medical problems for solution demand the correlation of a critical clinical study with the pathological findings.

The post-mortem examinations, though few in number, illustrate a wide range of maladies. Two cases of glioma of the cerebellum and one case of a diffuse haemorrhage in the pons are included in the list. To these may be added a case of "Hodgkin's disease," and one of lymphatic leukaemia. Rupture of the heart and an obliterated left coronary artery were also encountered. A spontaneous rupture of the right common iliac artery proved an unexpected finding in a case which in life presented symptoms of an acute peritonitis. Two other acute conditions are noteworthy, one of gangrenous pancreatitis, the other of an acute oedema of the larynx. The latter was due to an

extension of a phlegmon of the tissues of the face and throat, following an infection of the forehead with the streptococcus pyogenes. The clinical and pathological study of a primary lymph-endothelioma of the pleura formed the basis of an article, now in press. A double infection of the meninges of the brain was a rare occurrence. During life, the spinal fluid from this case yielded the pneumococcus in smear and culture. In microscopic sections, the meningitis was histologically tuberculous. There was also an associated miliary tuberculosis of the liver and spleen. The pneumococcus, however, was constant in the cultures from the nares and sphenoidal cells.

Thus the abundance of bacteriological, surgical, and post-mortem material enrich the resources of this laboratory, not only for investigation of problems, but also for teaching purposes.

III. TEACHING.

The work of the laboratory includes also the instruction of students of the Albany Medical College. The following laboratory courses were given during the year 1911-1912:

Courses.	Hrs. pr. wk.	
1. Histology and Embryology.....	6	By Drs. Bernstein, Kellert, Ayer, Southwell, Hacker and Jenkins.
.....		
2. Pathology and Bacteriology.....	7	By Drs. Bernstein, Kellert, Ayer, Allen, Southwell, Jupp and Hacker.
3. Anatomy and Pathology of the Nervous System	2	By Dr. Archambault.
4. Surgical Pathology	2	By Drs. Beilby and Draper.
5. Clinical Microscopy	2½	By Drs. Hawn and Sawyer.
6. Experimental Physiology. (1st year).....	2½	By Drs. Hawn and Sawyer.
7. Experimental Physiology. (2nd year—first half-year)	5	By Drs. Hawn and Sawyer.

In addition the amphitheatre has been utilized by the second year class for lectures in surgery during the second term of the second year; also for exercises in pediatrics by the third year class. Occasionally, an illustrated lecture in ophthalmology

has been held; and from time to time, fourth year students have been furnished accommodations for laboratory work, in connection with clinical cases assigned to them for study.

Of the above mentioned courses, numbers 1 to 5 inclusive, come under the control of the director. The courses in experimental physiology are conducted independently. In the previous year, they were given by Dr. Victor C. Myers, who resigned during the summer of 1911 to become Lecturer in Chemical Pathology, at the New York Post-Graduate Medical School. The thanks of the Medical College are due Drs. Hawn and Sawyer for undertaking to conduct experimental courses, beset with many difficulties. Their experience has emphasized the fact that demonstrations in physiology cannot be made with advantage to large classes and that men, engaged in the active practice of clinical medicine, find great difficulty in conducting experimental laboratory courses. Remedy for these conditions is promised for the next academic year by having full time salaried instructors in charge.

The courses in the Anatomy and Pathology of the Nervous System by Dr. Archambault and Clinical Microscopy by Drs. Hawn and Sawyer have maintained their former standards of thoroughness and completeness. The course in Surgical Pathology has suffered considerably both as the result of a division of responsibility and the unpreparedness of the students. At the beginning of the second year, the students have not sufficiently advanced to correlate the laboratory point of view with the clinical. It is suggested, therefore, that the instruction in Surgical Pathology begin during the second term of the second year.

The course in Histology and Embryology has been given as in the past year, with the exception that organs in the fresh were demonstrated to the students at the time when the microscopic study was undertaken. It will be recalled that the gross anatomy of organs forms a subject of the second year—one year after their histological consideration.

In Bacteriology and Pathology, the class has been divided into sections. Each section, under the guidance of an assistant, has received instruction in the varied technique. To the museum there have been many specimens added. Reliance for the demonstration of gross pathological lesions is entirely placed

upon the museum. The post-mortem examinations, few in number, have come at a time when it was either inopportune or impossible to have a small group of students in attendance. Unfortunately, a course in Pathology fails of an important purpose when opportunities are lacking to familiarize the student with gross morbid anatomy. Pathological histology soon loses its interest, save for the specialist.

In former years, the coroners' physicians have called upon the laboratory staff to conduct the post-mortem examinations. The staff has offered its services willingly and freely in return for the occasional privilege of instruction to a small group of students (never exceeding ten in number). The conditions under which post-mortem examinations are held in the city of Albany are primitive enough to shame one possessed with a sense of civic pride and of progress. There is no public morgue provided. A barn or woodshed with insufficient light, water, and heat has not yet been displaced by a building with modern facilities for post-mortem examinations. Only a few undertaking establishments furnish adequate protection for bodies awaiting identification—protection from decomposition and the morbidly curious.

Your board has been stirred by the knowledge of these conditions. It has sought their abolition by those entrusted with the government of the city. Accordingly, a committee consisting of Dr. Albert Vander Veer, Dr. George E. Gorham, and the director was appointed to recommend the establishment of a city morgue at this laboratory. The recommendation has been submitted to the city officials; and their favorable action thereon is confidently expected. It may not be amiss to quote in part from the committee's report:

"Autopsies performed at the Bender Hygienic Laboratory would furnish opportunities for the students of the Albany Medical College to gain knowledge in pathological anatomy. The staff would be enabled to demonstrate the ravages of disease to the students as it has done to the coroners, coroners' physicians, undertakers, and their followers. The value that accrues to the community from demonstrations to students is underestimated. These young men gain thereby a fundamental knowledge of processes which give rise to signs and symptoms in the living. These same young men in a few years after their

instruction in Pathology become practitioners. Into their hands is entrusted the welfare of communities; and the more their knowledge is increased, the more intelligent practitioners of medicine and surgery they become. This same method of instruction is carried on in all the medical centres of the country, in the form of medical and surgical clinics. No one denies the value of such demonstrations on the living to the general welfare. Similarly demonstrations on the dead redound to the common good.

"In the city of Boston, the three medical examiners hold teaching positions at the three medical schools and material is thus made available for teaching purposes.

"The layman abhors autopsies and justly so, as at present conducted under disgusting conditions. The State, on the other hand, exercises a paternalistic right and wishes to determine the causes of death under sudden or suspicious circumstances. These causes can be determined without any defacement or impropriety.

"A public morgue instituted at the Bender Hygienic Laboratory has the following recommendations for itself:

- " 1. The slight expenditure for body-containers instead of the erection of a new building.
- " 2. Inexpensive maintenance.
- " 3. Proper facilities for keeping bodies until identified.
- " 4. Decent and respectable conditions for performing autopsies.
- " 5. Performance of post-mortem examinations by coroners' physicians assisted by properly trained men.
- " 6. Control examinations of gross lesions by histological, bacteriological, and chemical methods.
- " 7. Typewritten reports sent to physician in charge of case.
- " 8. The determination of the whole truth in the best interests of the deceased, of his family, and of the State."

IV. RESEARCH AND SPECIAL STUDENTS.

The demands made upon the staff by the increasing routine and teaching, as described above, have minimized the opportunities for the investigation of special problems. The following articles have been published during the year:

- i. Archambault, La Salle.—A Contribution to the Symptomatology of Cerebral Abscess with Especial Reference to Diagnosis and to Indications for Surgical Intervention.

Report of two cases in which operation was followed by recovery.
New York State Journal of Medicine, Vol. 12, No. 10, October 1912.
Published in full, *ALBANY MEDICAL ANNALS*, January 1912.

2. Archambault, La Salle.—Report of Two Cases Exhibiting Lesions of Special Interest for the Localization of Aphasic Disorders. Presentation of Specimens. *The Journal of Nervous and Mental Disease*, Vol. 29, No. 10, October 1912.
3. Bernstein, Harry S.—Progress in Syphilology. *ALBANY MEDICAL ANNALS*, Vol. XXXIII, No. 3, March 1912.
4. Bernstein, Harry S.—On the Pathology of the Heart. *ALBANY MEDICAL ANNALS*, Vol. XXXIII, No. 5, May 1912.
5. Kellert, Ellis.—The Pathology of the Lungs. *ALBANY MEDICAL ANNALS*, Vol. XXXIII, No. 6, June 1912.
6. Myers, V. C., and Volovic, G. O.—Metabolism in an Experimental Fever, with Special Reference to the Elimination of Creatinine. *Journal of Medical Research*. (In press.)
7. Ordway, Thomas; Kellert, Ellis; Huested, Frank P.—A Typhoid-like Disease in Rabbits caused by *Bacillus Suipesticus*, with Particular Reference to the Clinical Course and Prophylactic Vaccination. *Journal of Medical Research*. (In press.)
8. Sampson, John A.—The Blood Supply of Uterine Myomata. Based on the Study of One Hundred Injected Uteri Containing these Tumors. *Surgery, Gynecology, and Obstetrics*, March 1912.

The records of this laboratory were also embodied in the two following papers by Dr. E. M. Stanton of Schenectady:

"The Prognosis in Gallstone Diseases," and "The Frequency of Surgical Lesions of the Kidney and Ureter as Estimated from Autopsy and Hospital Records."

The laboratory has, at all times, welcomed men interested in pursuing special branches of study. Dr. John A. Sampson has been continuing his research on gynecological problems. Mr. Frank P. Huested, Professor of Chemistry of the Albany High School, has been engaged in bacteriological investigations. Dr. Horace M. Hicks of Amsterdam and Dr. Michael E. Deluca of Troy have done special work in bacteriology and clinical microscopy. Messrs. John P. Byrnes and George J. Culver, undergraduates of the Albany Medical College, and Mr. David W. Houston, Jr. (Princeton University, 1912), have assisted during the summer vacation in laboratory routine and in research. A special course in Hematology was given to Miss Susan Rundell, graduate nurse of the Albany Hospital. Miss Rundell is to assist Dr. Howard Van Rensselaer at the Albany Hospital Tuberculosis Sanatorium.

V. FINANCIAL STATEMENT.

It is to be recalled that the laboratory has only a small endowment to cover insurance and necessary repairs. The running expenses are therefore defrayed by whatever the laboratory earns in serving the different hospitals, the State and City Departments of Health, the Albany Medical College, and physicians in general.

The following statement of accounts represents the earnings and expenditures which were handled through the office of the director:

LABORATORY INCOME.

From September 1, 1911 to September 1, 1912.

Balance on hand.....	\$658 94
Students' locker fees.....	382 00
Albany Medical College.....	900 00
Hospitals.	380 00
Examination of surgical specimens for Drs. Albert Vander Veer, Arthur W. Elting and John A. Sampson.....	700 00
Examination of specimens other than above noted.....	2,552 40
 Total.	 \$5,573 34

LABORATORY EXPENSES.

From September 1, 1911 to September 1, 1912

Salaries and labor in excess of that paid by the Registrar of the Albany Medical College.....	\$2,747 42
Laboratory supplies and equipment other than paid for by the Registrar of the Albany Medical College.....	171 41
Petty accounts, including office and cleaning supplies, express-age, postage stamps, refund to students for keys, and car fares.	294 05
Telephone.	100 95
Books.	100 96
Stationery.	54 70
Animals.	242 01
Food for animals.....	127 85
Laundry.	30 59
Electricity (light and power).....	21 00
Balance on hand September 1, 1912.....	1,136 40

Total. \$5,573 34

To the sum above quoted, which represents the laboratory earnings, \$3,500 are to be added. This sum includes \$2,000 from the State Department of Health and \$1,500 from the City Department of Health. The total earnings of the year have therefore been \$9,073.34.

It is a pleasure to record the renewal of contract service with Drs. A. S. Vander Veer, A. W. Elting and J. A. Sampson. The revenue from the hospitals merits discussion. The Albany Hospital, in addition to paying twenty dollars per month, provides for the service of a pathological house-officer. His salary is \$500 per annum, board is included. The laboratory acknowledges with thanks this provision on the part of the Governors of the Albany Hospital. St. Peter's Hospital has furnished 726 specimens for examination. In return the hospital pays the laboratory \$5 per month. According to custom, the bill submitted to the hospital is for "stenographer's service." Official cognizance is thus taken of the service in typewriting the reports, but not of the services which make the reports possible. It is true that the majority of specimens from St. Peter's Hospital are on Dr. Elting's service. The latter pays \$300 per annum for examination of surgical specimens which come from the Albany Hospital, St. Peter's Hospital, and other sources. Yet the services rendered to St. Peter's Hospital includes bacteriological and serological examinations not only on patients of Dr. Elting's, but also on public and private patients of other members of the visiting staff. Control examination by laboratory methods is now sufficiently well recognized that all modern hospitals have appropriations for a pathological service. It is hoped that your board will call the attention of the Governors of St. Peter's Hospital to the inadequacy of their appropriation. The Child's Hospital and St. Margaret's House do not make any contribution for laboratory services. The Homeopathic Hospital has paid \$100 and its staff contemplate an increase in their appropriation for the increasing work. The appropriation from the State Department of Health has been \$2,000, a decrease of \$500 from the appropriation of two years ago. The number of examinations made, however, has amounted to 9,274 as compared with 5,051 of the preceding year. This increase is due in part to the natural growth of population, but more especially to the increasing demands of laboratory diagnosis by the profession at large. The laboratory does not perform State work regularly. In the absence of the State Bacteriologist, due to some exigency in the Public Health, the State work is immediately transferred to this laboratory, and is carried on without any interruption.

The Bender Laboratory, therefore, is one of the "reserve" forces of the State Department.

The following tabulation indicates the marked increase in diagnostic examinations made for the Albany City Department of Health:

Year.	Number
1903-1904.....	758
1908-1909.....	1369
1909-1910.....	2559
1910-1911.....	2146
1911-1912.....	3060

The work consists in examining cultures for the presence of the diphtheria bacillus, and sputa for the tubercle bacillus. In addition, the laboratory prepares the blood-serum cultures and swabs, and is responsible for their distribution and collection. Notwithstanding the increased number of examinations and the increased cost of labor and material, the city appropriation has remained the same. It is evident that four times the amount of work has been done last year as compared with that of eight years ago. Moreover, the re-incubation and re-examination of "suspicious" cultures, the resort to animal inoculation to determine the pathogenicity of the organism in "diphtheria carriers" adds to the labor, and insures every safeguard for the public health. Now, it is seen from the statistics of the City Health Department that typhoid fever is on the list of "reportable diseases." The Health Department on the one hand exercises the right to control the spread of contagious diseases; the physician on the other hand ought to be afforded, by the Department, laboratory means of diagnosis. Amongst the latter, the Widal test has proved to be reliable for the diagnosis of typhoid fever. Soon after the announcement in 1896, the test was submitted to critical workers the world over. It has since then been adopted by Boards of Health and is performed by them as a public measure.

Thus, from available health reports, the following cities: Hartford, Conn.; New Bedford, Springfield and Lawrence, Mass.; Tacoma, Wash.; Houston, Texas; Duluth, Minn.; and Somerville, Mass., include the Widal test in the city work. The population of these cities is less than 100,000 and that of Somerville being 77,236. The cities above the hundred thousand mark, viz.:

Bridgeport, Conn.; Cambridge, and Lowell, Mass.; Nashville, Tenn.; Grand Rapids, Mich.; Fall River, Mass.; Omaha, Neb.; and Richmond, Va. (population of which is 127,628) likewise provide for the laboratory diagnosis of typhoid fever. The city of Albany has not yet done so. Accordingly, many Widal tests are performed by this laboratory without any return for its service. It is incumbent upon the Board of Health to make provision for this additional work.

The financial relations between the Albany Medical College and this laboratory have been much simplified. A contract went into effect July 1, 1912, as a result of which the Treasurer of your board has assumed direct control of the earnings and expenditures of this institution, instead of the Registrar of the college. The college, in return for services rendered, pays the salaries of the director and two assistants.

The following is the Registrar's statement of expenditures made by the college on behalf of the laboratory for teaching purposes, from September 1, 1911 to June 30, 1912:

Salaries.	\$4,184 85
Furniture, etc.	23 05
Apparatus.	927 43
Coal and Gas.	497 79
ANNALS, a/c printing director's report.	10 00
Electric installation, main laboratory.	212 70
<hr/>	
Total.	\$5,855 82

The examination of specimens for private physicians has shown a growth similar to that of the public health work. The laboratory draws on a large territory for its private work. Yonkers, Pittsfield and North Adams, Mass., Barre, Vt., Plattsburg, Ogdensburg, and Corning define the geographical limits. It must be emphasized that the laboratory at all times has shown a readiness to cooperate with physicians in the best interests of the private individual. To this end, it has given freely of its time and effort.

VI. REPAIRS AND EQUIPMENT.

During the winter, repairs on the furnace were necessitated, owing to the corrosion of an exhaust pipe. It was deemed advisable at the time to make additional repairs on the heating system to insure proper warmth in the building. Larger radia-

tors were substituted for small ones, and new valves installed throughout. Connection between the furnace and hot water boiler was established. The vulcan heater can consequently be dispensed with when the furnace is in use. The interior of the building was also thoroughly attended to. The walls were painted and the woodwork varnished. The ceiling of the amphitheatre was entirely covered with metal and painted. The front steps which had begun to show the effects of weathering fifteen years were reset, and some of the worn out stones replaced. Electric wiring was installed in the director's and technician's room and in the office. The short winter days demanded abundant desk-light for efficient work.

A new typewriting machine was purchased. A small four-arm electric centrifuge was added to the equipment of the bacteriological room. This small machine is conveniently located for routine work. The large centrifuge in the media room is reserved for special purposes.

The laboratory, at present, is well equipped for its various duties. A few needs, however, are presenting themselves. The most urgent one is that of window screens. During the summer months, work is rendered uncomfortable because of the flies that are attracted through the unscreened doors and windows. A filing cabinet will also be required for the rapidly increasing number of microscopic slides.

The new academic year opens up auspiciously for college work. The staffs of instruction have their full quota. The students' laboratory has been wired for electric lighting. Low desk-lights and several portable lights have been installed for microscopic and general illumination. The microscopes have all been inspected and necessary repairs on them have been made. The same holds true of the lockers.

The year's work pertaining to Board of Health examinations, as reviewed above, has tripled all previous records. It is not the intention to lay emphasis on the amount of work done, as on the team-play and system that made such a record possible. This institution owes a great debt to Dr. Thomas Ordway for the effective reorganization of its methods.

The duties of the laboratory are manifold. It is engaged in public health work by virtue of its service to the State and City Department of Health. It performs bacteriological and

pathological routine for the hospitals of Albany. Moreover, it affords instruction to the undergraduates of the Albany Medical College in Histology, Embryology, Bacteriology, Pathology, Neuropathology, Surgical Pathology, and Clinical Microscopy. It harbors the department of Experimental Physiology and provides for post-graduate instruction. It, also, offers opportunities to the clinician to carry on original work. Finally, it serves the private individual through members of the medical profession.

My thanks are due your board for your kindly interest and co-operation.

Respectfully submitted,
HARRY S. BERNSTEIN,
Director.

HOSPITALS AND SANATORIA FOR TUBERCULOSIS.

*Read at the First Capital District Conference on Charities and Correction
at Albany March 12, 1913.*

By WALTER SANDS MILLS, A. B., M. D.,

*Visiting Physician to the Tuberculosis Infirmary of the Metropolitan Hospital,
Department of Public Charities, New York City.*

The text assigned me for discussion is "Hospitals and Sanatoria for Tuberculosis." Before speaking of Hospitals and Sanatoria, I wish to say a few words about tuberculosis.

Tuberculosis is the most widely disseminated disease of mankind. It is estimated that one-seventh of the world's population dies of it. It has been found that about one-third of the bodies that come to autopsy, dead from whatever cause, present evidence of healed tuberculosis. Or, to put it in another way, of every hundred deaths, fourteen are directly due to this universal disease; and nineteen others of the dead have had tuberculosis at some time during life, have recovered from it, and have finally died of some other cause. Practically every person who reaches adult age has had tuberculosis at some time or other. These facts show that tuberculosis is not necessarily a fatal disease.

Of recent years, those best qualified to judge have come to believe that in the vast majority of tuberculosis cases infection occurs very early in life, and that the disease remains latent for a long time, possibly years, until some adverse influence causes it to manifest itself.

Tuberculosis is essentially a chronic disease. In fatal cases, the average duration after symptoms show themselves is two years. Sometimes the disease runs a much longer course,—rarely, it may be much shorter.

Patients suffering from tuberculosis present themselves to the physician in all stages of the disease, from the very earliest, when all the symptoms are slight, to the very last stage, when the patient has but a short time to live. The well-to-do patients can provide proper care and treatment for themselves, but the poor must be provided for at public expense. It is of this public provision that I wish more particularly to speak.

Incipient cases, cases that are in the very earliest stages, are best treated in sanatoria. Many of them will get well if they have proper hygienic surroundings, plenty of nourishing food, and mental and physical rest. These things are all best attained in properly conducted sanatoria under proper medical supervision. Medical supervision is necessary, because some sort of medicinal treatment is often as necessary as fresh air, food, and rest.

I find on looking in my dictionary, that a sanatorium is "a retreat for invalids or convalescent persons, selected with reference to the salubrity of its situation." The location of the sanatorium is thus the first consideration. In New York State, the Adirondack Mountain region is the favored place for tuberculosis sanatoria, and the State itself maintains one there at Ray Brook. There are other localities that also enjoy favorable reputations for salubrity for tuberculosis patients. The Department of Health of the City of New York maintains a sanatorium at Otisville, in Orange County. Sullivan County is still another favored place.

How much permanent good sanatoria do, I do not know. Patients sent to them almost invariably do well while they remain as inmates. This is due to several reasons. First, only patients with slight symptoms,—picked cases,—are accepted. Second, as inmates, these patients live under ideal conditions.

Some question can be made, however, as to the ultimate good accomplished. As now conducted, most of the public or semi-public sanatoria,—that is, sanatoria for charity patients or sanatoria for those able to pay but a very small fee,—have a time limit for the stay of patients, varying from three to twelve months. Very few tuberculosis patients,—even those in the very

earliest stages,—can be permanently cured in so short a time. Consequently, when these patients are discharged and sent back to their old living conditions the tendency is for the disease process to light up again. Such patients are worse off than in the beginning, for a second stay in a sanitorium is less beneficial than the first because the disease has a stronger hold on them. I have repeatedly had patients come to me for examination who have been in sanatoria one or more times, who have gotten better while there, but who have promptly gone down hill when sent home. Had they been able to stay in the sanatoria a longer time, some of them might have been completely cured.

Living under ideal conditions is all very well if it can be continued indefinitely. But the average charity patient, when he ceases to be a patient, is unable to command ideal conditions of living. Unless completely cured, he is bound to relapse when he returns to his ordinary environment.

It would seem to me as though much more real good could be accomplished if a larger number of beds could be provided in sanatoria, so that the time limit of stay could be extended to at least two years. A few cases would entirely recover in less time, and could be discharged when cured. Those who needed the full two years should be given the opportunity to remain that long.

I am certain that many patients who now improve under the six or twelve months' regime, would entirely recover in two years. Then they could resume their ordinary mode of living with less risk of relapse. In the long run, I believe such a policy would pay. It would mean the return to economic efficiency of many that now go from one sanatorium to another, staying the limit at each, with a semi-invalidism at home during the intervals,—only to succumb finally, without ever becoming able to care for themselves economically. Such patients may spend more than two years of actual time in Sanatoria, but never long enough at any one time to entirely recover.

There is one class of tuberculosis cases that to my mind is not adequately provided for. I refer to those cases with well-marked symptoms, who are too far advanced to be acceptable to the sanatoria but who are not sick enough to need real hospital care. Many of them, of necessity, go to hospitals because there is no other place for them. I believe that a goodly per-

centage of such cases could be cured if they could have the routine and salubriousness of the sanatorium. Public sanatoria ought to have a division set apart for such cases. Many patients referred to me for examination for Ray Brook are of this character. It is always a matter of keen regret to me to be obliged to reject them, but the accommodations at Ray Brook are limited, and the rules permit admission of only incipient cases.

As I have said above, the really incipient cases will do well almost anywhere with proper hygienic surroundings. The cases with well marked symptoms, who are not yet in the last stages of tuberculosis, are in far more urgent need of all the aid that a salubrious situation can give. Yet there is no place for them outside the special hospitals which are not so healthfully located, as a rule. Charity patients of this class are sometimes taken at Otisville, I am happy to say, where the rules are not quite so stringent as they are at most sanatoria.

I have had many patients come to me for advice as to where to go, whom I could not place on account of their financial conditions. The rich can always find places to go to. Those poor enough to be actual charity patients can be provided for at Sanatoria or in hospitals. But the patients who can pay a little, patients such as I have described, who are neither in the incipient stages nor far enough along for the hospital,—for such patients there seems to be no place at present.

Indigent patients far advanced in tuberculosis need hospital care. Such patients should not be sent long distances from home, but should be cared for in hospitals where it is possible for their relatives and friends to go to see them. Each community should care for its own advanced cases. The tuberculosis hospital should have plenty of room, with ample open air space about it. A special feature should be a roof garden, or better, balconies from each floor where bed patients can be kept out of doors all the time when the weather permits. Otherwise, the Tuberculosis Hospital need differ in no essential particular from any other.

Finally, there is need for more accommodations for tuberculous children. Just at present, New York City is caring for nearly a hundred tuberculosis children at the Tuberculosis infirmary on Blackwell's Island. In time, we hope to have a special building for them, to hold many more. Children seem

to respond to treatment more readily than adults. So far as my knowledge goes, special institutions or parts of institutions for tuberculous children, even where adults are adequately provided for, are very few. That is what we need the most.

THE DEFECTIVE DELINQUENT.

*Read at the Capital District Conference of Charities and Correction,
March 11, 1913.*

By FRANK L. CHRISTIAN, M. D.,

Assistant Superintendent of the New York State Reformatory at Elmira.

It is commonly understood that the various correctional institutions receive normal boys and girls, who for some reason, little understood, have violated the law, and are sent away to be reformed by a process that is equally as vague. That a large proportion of these delinquents are abnormal and are decidedly different from the average child, has been to the uninformed a fairly recent revelation. The men and women, who for years have carried the burden of the care and instruction of the states' youthful offenders, recognized long ago that many of their charges were both physically and mentally abnormal. For more than a half century past, investigators engaged in penal work have slowly and carefully marshalled the facts and figures that have culminated in the wide-spread interest and knowledge of the present day. In our own state, the officials of the New York State Reformatory, more than twenty-five years ago recognized a class of inmates, who were mentally deficient, and prepared an elaborate and carefully arranged plan for their treatment. Mr. Z. R. Brockway, during his administration, made a careful record of the mental capacity of each inmate, and in more recent years this work has been continued by the physicians. In 1901, the number considered defective was twenty per cent, and in 1912, this had increased to forty-two per cent. The mental capacity of the inmates has not decreased, but the improved method of conducting the examination has enabled the physicians to detect many, who formerly passed as normal.

The wide-spread use of the psychological tests as devised by Binet, Huey and Healy, has enabled investigators in schools,

charitable and correctional institutions, to ascertain quite accurately the mental abilities of their wards. While these methods will detect a great majority of the defectives in the schools and charitable institutions, it was found that a certain type of inmates in the reformatories, who are plainly defective, are able to pass these tests. This fact led Dr. Fernald to devise a system especially applicable to the detection of the defective delinquent. He has recently published a study of one hundred cases, and has demonstrated that the mental ability of each inmate may be mathematically computed by means of an efficiency record. This system, with its subsequent developments, will be of value to investigators in this field. By the aid of these various psychological tests, the examiner is able to detect feeble-mindedness, and also the extent of mental deficiency in a fairly accurate manner. The ease with which some of these tests can be applied, has encouraged many untrained persons to use them with disastrous results. To declare a child feeble-minded is a serious responsibility, and the harm resulting from a mistaken diagnosis, may be a tremendous handicap in the future development and education of the child. The experienced psychologist or physician considers these tests a valuable aid, but takes a number of other equally important factors into consideration before arriving at a final decision.

The number of the defectives in the correctional institutions has been quite accurately determined in recent years, and considering the personal equation of the examiners the results are fairly uniform. The reformatory for women at Bedford, states that thirty-seven per cent are defective; the New Jersey Reformatory, thirty-three per cent. Dr. Healy reports that of six hundred cases examined at the Juvenile Court in Chicago, thirty-three per cent were below normal mentally. I am unable to find a record of any examination in the juvenile institutions in New York State, but presume that the results of Dr. Healy would obtain here. Dr. Goddard has reported, out of one hundred children examined in the Newark Juvenile Court he was able to find but one, who was mentally normal, and sixty-six per cent were decidedly feeble-minded. Dr. George W. Parker declares that over ten per cent of the inmates of the Tombs Prison in New York City are semi-responsible or insane.

An inquiry into the extent of education among the inmates of

the penal institutions, illustrates the value of education as a preventive of crime.

In a recent paper, Dr. James V. May states: "The criminal is almost invariably deficient in education. This is due partially to mental inferiority, which renders any advanced intellectual development difficult, and to a certain extent to lack of opportunity. Sutherland reports that of 188,678 convicts in England, in 1907, less than one per cent had a higher education, twenty-four per cent could read and write well, seventy-eight per cent could read and write imperfectly, and nineteen per cent were entirely illiterate. Fifty-five, or 1.2 per cent of the 4,570 inmates of the New York State prisons in 1911 were college graduates or had a collegiate training, 173, or 3.7 per cent, had an academic or high school education, 2,499, or 54.6 per cent, had a common school education, 1,085, or 23.7 per cent, could either read or write or both, and 758, or 16.5 per cent, had no English education whatever." Of over fifteen thousand young men received at Elmira at an average age of twenty, less than one-half of one per cent were high school graduates. While we accept inmates from sixteen to thirty years of age, I personally have known but three college graduates, who have been committed to the reformatory. It is quite apparent from these figures, that the statement so often made, that the correctional institutions are populated by educated men and latent geniuses, is a fallacy. On the contrary, one of the unfailing characteristics of the habitual criminal is ignorance.

A number of years ago, Dr. Lamb estimated that twenty per cent of the criminals in our state prisons were mentally abnormal, and the tests that I have mentioned, if applied to-day, would increase this figure to more than double. In the penal institutions and reformatories, you may find all the varieties of mental abnormalities, the imbecile, the moron, the epileptic, the border-land cases, the dementia-praecox, the paranoic, the sexual and the moral pervert. The remainder whose mental processes are normal, and who, in civil life, would deduct the usual opinion from observation, reason and judgment, compose a select minority.

The defective delinquent presents a distinct type, and offers an interesting study not only of himself, but also of his environment and ancestry. The cause of his feeble-mindedness is not easily determined, and a family history obtained from him will be

of but little value. He may be a product of heredity or of environment, or of both, as it is practically impossible to separate these too much discussed factors. A discussion as to his origin is not the intent of this paper. The life history and general characteristics of one of these misfits is usually as follows. In early childhood, he has been somewhat backward, dull, and given to fits of temper. Attending school he has not made progress as have the other children, has been kept in a low class, and perhaps put in some class for special instruction. He may have played truant and was sent to a truant school where he finds himself in disgrace because of his conduct. Released, he may be at home for a time and be sent to school or to work, and then fails to conduct himself and violates some ordinance, or commits a petty offense, and is sent to the House of Refuge, or to one of the many similar institutions. After a checkered career there, he is released upon parole or to his family, and perhaps after an interval of temporary good behavior, he again relapses and is arrested for a more serious offense, and soon is within the walls of the reformatory.

An examination of him here reveals his physical and mental unfitness, he is hollow chested, rachitic, and ill-nourished. Perhaps, he is tuberculous, twenty per cent are, or he has already contracted serious venereal diseases, thirty-nine per cent are so affected. Forty-eight per cent are already accustomed to the use of alcoholic beverages and seventy-seven per cent smoke cigarettes. Mentally, he is usually dull, seems pre-occupied, and comprehends slowly. He has not been accustomed to continuous effort, and so has not gained a knowledge of any useful occupation. If he has worked at all, it has probably been at "odd jobs" that afforded plenty of intermittent diversions, for this type can not be depended upon to do any task without supervision. Their immediate desires must always be satisfied, and they will go to extremes, regardless of known consequences, in order to obtain the moment's desire. They have always specious excuses for their shortcomings, and are ever ready to lay the blame of their downfall upon some one else. They are selfish, vain, and cruel, and act upon neither reason nor judgment, but principally upon impulses. Their mental processes work slowly, and they detest and will avoid, when possible, any sustained

mental effort. They are vindictive and revengeful, and are always eager to make a personal attack to right any imagined wrong. They usually deny their crimes, although they have had a just trial. If they plead guilty, they blame the District Attorney or their lawyer for "putting up a job" on them.

Few are good physical specimens, and practically all show the stigmata of physical degeneracy. They have little or no conception of morals, and will indulge in falsehoods and deceit when the truth would have served better. At times, they lie outrageously without any apparent purpose, and many of the stories of alleged mismanagement and abuse that have been told by these youngsters, have existed only in their imaginations. They seem to delight in producing dissensions, and if possible, to be the cause of the discussion. While they are frequently able to differentiate between right and wrong as an abstract proposition, they seem utterly unable to follow the principles in their conduct when at large. I frequently ask them ethical questions, and the answers would lead the uninitiated to suspect that the boy had been occupying the front row in Sunday School all his days. The future holds no great concern for these defectives; each day is a day unto itself. If they have aspirations and ambitions, they lack the ability and purpose to accomplish them. They will always take a gambler's chance for a momentary joy. They are self-centered and some of them are immeasurably egotistic. They like good clothes, and are fond of personal adornment; delight in gaudy trifles, but bodily cleanliness is apt to be unobserved. One of their most unfailing characteristics is lack of stability. The boy is willing and anxious to change his trade each week, were he so allowed. He also demands to be placed in the lowest class in school, and when properly graded, complains that he "never studied this on the outside."

Ignorance of the intimate family affairs is frequently observed. Many defectives, who have lived at home for a considerable period, especially those who come from the large cities, are unable to give a correct history of their immediate family. The father may go to work each day and have worked for years for the same firm, but the lad is unable to tell you the name and knows only that his father works somewhere down town. He is also unable to give an accurate account of the whereabouts of his married brothers and sisters, and knows very little about the

aunt, uncle or grandparents. While he purports to have a very sincere affection for his father and mother, the only evidence of this is brought out when he is confined in some institution. He then constantly refers with an ulterior motive about his father and mother, but when paroled and sent back home, promptly disobeys, has little or no respect for them, refuses to live at home because of parental restrictions, and declines to assist in the support of the family. These defectives are always children regardless of years or stature. Their mental processes have been arrested, and though an adult in stature, they have the mind, judgment and impulses of a child. When they leave the correctional institutions and go on parole, the supervision, surroundings, and employment will have to be ideal to expect success of these individuals whom nature has so seriously handicapped.

The foregoing description represents in a broad way the physical and mental shortcomings of the defective. There are, of course, many exceptions, and because we have classed a boy as mentally defective does not mean that he looks and acts like the classic fool. In many instances, it is quite the contrary, and some of the high grade defectives are among the brightest, cleanest, and cleverest boys that we have; they have an exterior polish that is not penetrated except upon extended acquaintance.

In every correctional institution, the inmates may be separated into two distinct classes. The first will include those who are capable of development, but who lack education and mechanical skill. After proper instruction, most of these will be able to maintain themselves without further aid, and will reflect credit upon the modern correctional methods. The second class are those handicapped by nature in mental equipment, and who regardless of training will probably be unable to succeed when dependent upon their own efforts. From these will come the repeated relapses, and the uninformed will not appreciate that it is the material and not the method that has failed.

Any system that has for its object the complete regeneration of these defectives must be prepared to meet with many failures. Considered from a medical viewpoint, the defective delinquent is a chronic case long before the reformatory receives him. He has already had the benefit of the education and training received in the juvenile institutions. The reformatory receives him after all previous efforts have failed. He has been under supervision

in the schools, perhaps in the retarded classes, and the truant school has also failed to help him. Later some juvenile corrective institution receives him and affords no benefit, and having run the gamut of a half dozen eleemosynary institutions without redemption, he is sent to the reformatory with a sincere sigh of relief from those who have labored in vain with him.

The strenuous routine of the reformatories' treatment cannot be applied indiscriminately to this class; their defectiveness requires and receives special treatment. They are unable to progress as are the other inmates, and require individual instruction, moreover, constant exceptions have to be made for their shortcomings. The officials long since recognized that feeble-mindedness and degeneracy are defects and not disease, and that cure is impossible, and improvement is all that can be accomplished. No feeble-minded person is ever cured, and it is a fallacy to suppose that reformatory treatment can supply that which nature has refused. In many instances, the instruction may result in improvement, but we can scarcely expect to make a normal boy, or to develop latent mentality where the same does not exist. The treatment is given in the hope that we may awaken that which is dormant in the undeveloped mind. All efforts, therefore, are directed to produce this mental awakening. In effect the reformatory must act as a hospital where these unfortunates who have violated the law by reason of their mental limitations are to be helped if possible. Here the delinquent must be made accustomed to work with both hands and head. Here we attempt to improve his character, develop his moral sense, cure his evil passions, and endeavor to educate him in a broad and comprehensive manner. The reformatory must act as a school and also as a moral society to counteract the influences of his early environment. It must improve his physical condition, correct as far as possible his bodily defects, and produce a sound body in which to make the attempt to develop an intellect that nature has abandoned.

One serious mistake that is being made in many correctional institutions, even in the light of the present day, is the failure to separate the individual from the class in the treatment of these defectives. They are too frequently classified in groups or divisions, and all are expected to receive the same instruction, and to be subjected to the same general rules. The error of this

is plain to any careful thinking person, for every defective boy presents a separate study. The treatment that is prescribed for him, the instruction that he shall receive, and the conduct that shall be demanded from him should not be dependent upon any class nor upon any other single inmate of the institution. It is just as necessary to have individual treatment of the defective delinquent, and distinctive consideration of his individual case, as it is that every patient who is admitted to a general hospital should have separate diagnosis and treatment for his particular symptoms or disease.

After a period varying from fifteen to thirty months, these defectives are released upon parole. Those who can be placed in the hands of their relatives or friends who can appreciate their mental condition, and will give them careful supervision, may be able to live within the law. On the other hand, it is necessary to send most of them out to regular employment, there to meet the strife of our present industrial life. No matter how excellent their institutional record may have been when thrown upon their own resources these boys frequently fail. They lack stability, judgment and efficiency, and cannot compete with the requirements demanded by their employers. They are unable to make a livelihood and in the large cities soon find their way back to the old gang, the pool room, the saloon. Few can improve their social environment, and as the backward path is easily followed, they soon drift down to the lowest level.

The reformatory at Elmira has a record of more than sixteen thousand of its paroled inmates. Of this number, thirty-three per cent have violated the requirements of their parole or have been subsequently arrested for other offenses. The remaining sixty-seven per cent, in so far as we are able to determine, have remained law-abiding members of the community. Statistics show that twenty-eight per cent of the inmates of the New York State prisons have previously been confined in some reformatory or other correctional institution. An inquiry into the mental abilities of these would unquestionably demonstrate that they are largely defective. Their history will reveal that from the truant school in early life to the prison years later they have been in and out of eleemosynary and correctional institutions all of their days. It is generally understood that the reformatories take only first offenders. This is true of felons,

but it does not include arrests for misdemeanors and violation of various ordinances. Thirty-eight per cent of the population has been in the hands of the courts anywhere from one to a half dozen times, and have been confined in juvenile institutions, jails, workhouses or penitentiaries.

That reformatory treatment by different institutions fails to cure the defective delinquent is evident. That he is not responsible for his acts to the same degree that the normal person is, would never be questioned by those who know him thoroughly. He is not insane, and he is not an idiot; he is a weak-minded boy, whose criminal tendencies render him a menace to society and posterity. The public has every right to be protected not only from him, but also from his offspring. While we can hardly assert that criminality is inherited, yet we are certain that insanity, degeneracy and feeble-mindedness when combined with criminality will reproduce only more material to populate the asylums and prisons. The defective delinquent needs special care and instruction, and a separate institution that shall be custodial in character is desirable. His presence in the reformatory is a hindrance to the efforts that are being made for the more hopeful inmates, and the institutions were not devised nor intended for his detention. The courts should commit him primarily to a custodial institution, and the period of his confinement should be indefinite, but his parole possible, if he show sufficient improvement to warrant such confidence. His training had best be planned along agricultural pursuits, and every effort made to place him in the country removed as far as possible from the cities' influences. We may expect that the number of relapses will be large, and many will have to be returned for permanent confinement. For those who fail to show any improvement after a reasonable period of treatment, permanent custodial care should be provided unless other measures will afford relief. A bill has been introduced in the present legislature authorizing the selection of land for a site for the New York State Custodial Asylum for feeble-minded male delinquents. This bill has the unanimous support of all those who are familiar with the problems that these defectives present.

Perhaps these defective delinquents should be asexualized as provided by the law passed last year through the efforts of Dr.

R. P. Bush. The commission created by this law has examined some of the mentally abnormal inmates at Elmira and will soon sterilize them. Eight states have passed measures of this kind and others are about to do so. Properly conducted upon selected cases, this procedure is of undoubted value.

THREE UNUSUAL CASES OF DIPHTHERIA FROM A CARRIER.

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The cases which are the subjects of this report came under my observation nearly three years ago and were presented in a brief paper at that time before the Rensselaer County Medical Society, but not published. On account of some interesting features exhibited by these cases, it occurred to me that a somewhat fuller report might be interesting to the readers of this journal.

This miniature epidemic occurred in the Troy Orphan Asylum in the year 1910 during the service of Dr. E. R. Stillman, to whose kindness I am indebted for the opportunity to perform the autopsies and for permission to present them in this paper. The cases reported are those of the three infants who died and upon whom autopsies were done, together with the history of the carrier. Four other cases developing in another part of the asylum at about the same time ran uneventful courses of ordinary severity and recovered. From the fact that they were at all times totally isolated from the carrier, it was considered that they were not etiologically related. All three babies were of illegitimate birth; all three were congenitally syphilitic.

CASE I.—R. B. J., female, admitted to the Asylum April 3, 1909. She was about one year of age and was a poorly nourished, feeble, undersized infant for her age. She presented a typical luetic eruption and a nasal snuffle with profuse discharge.

She was taken ill on January 8, 1910. The onset was very sudden and was characterized by respiratory embarrassment of apparently laryngeal origin. The temperature was about 100°, the pulse fair in quality and not rapid, but the respirations were quickened, forced, accompanied by great stridor, inspiratory retraction of the abdomen and indications of air-hunger. The conjunctivae were suffused, the eyes bulging, the skin cyanotic and covered with sweat. On examination, extreme edema of the pharynx and

larynx were found and intubation was therefore decided upon in view of the urgency of the symptoms. Repeated attempts proved fruitless, however, and the child succumbed on January 9, after an illness of less than 48 hours. The pulse remained fairly slow and of good quality until quite near the end, and the temperature never rose above 101. The respiratory distress, however, increased steadily from the onset and reached its maximum at exitus. So rapid, indeed, was its development that no time was given even for an emergency tracheotomy. The child literally strangled to death. An autopsy was ordered and its protocol follows.

R. B. J., aged 1 year. Troy Orphan Asylum. Service of Dr. Stillman. Coroner's case. Died January 9, 1910, 9:30 P. M. Autopsy January 10, 1910, 10:30 P. M.

The body is that of an under-developed and puny infant, 54 cm. in length. Rigor mortis marked. Pupils slightly dilated and equal. Post mortem lividity in dependent portions. No rachitic rosary. No nodosities on the long bones. No epiphyseal enlargements. Both fontanelles open. The abdomen shows little fatty panniculus. On section no fluid and no adhesions in the cavity are seen. The mesenteric lymph nodes are not enlarged. The peritoneal surfaces are all smooth and glistening.

Thoracic Organs.—Pericardial sac contains two ounces of clear yellow fluid, but is otherwise negative.

Heart is entirely negative. Aorta and coronary arteries are negative.

Pleural surfaces negative on both sides.

The right lung exudes an excess of bloody serous fluid on section but is otherwise negative.

Left lung. The lower lobe is wholly solid and airless save for a small area on the anterior surface which crepitates slightly. The pleura is dark red in color over the whole lobe but is entirely free from fibrin or fibrous adhesions. On section, the cut surface is moist and exudes a blood-stained, purulent fluid on pressure. No plugs of solid exudate can be expressed from the lung substance. This portion is airless and solid, but has not the dry appearance of an early lobar pneumonia. The bronchi are clear of exudate but the epithelial surfaces are quite reddened.

The tongue, larynx and trachea are removed together. On the right side of the uvula is a narrow, sinuous strip of a dirty yellowish white exudate slightly raised above the surrounding tissue, which extends over to the right pillar, down over the tonsil and around to the posterior wall of the pharynx. Its composition seems fibrinous but it is so delicate as to be uncertain in character. It is surrounded by a zone of congestion and edema and is most difficult to peel off. There is moderate congestion of the whole pharyngeal, laryngeal and tracheal mucous membranes, but no exudate of any kind except for the bronchi, whose walls are bathed by a profuse muco-purulent material. There is some edema and swelling about the pharynx and larynx but to no such extent as was noted during the height of the attack and which rendered intubation impossible.

Abdominal Organs.—The spleen is firm and of good color. On section, it is somewhat hyperaemic and the Malpighian bodies are prominent and easily visible.

The liver shows no focal necroses and is generally negative.

The gall bladder, stomach, intestines, pancreas, kidneys, adrenals, appendix, urinary bladder and genitalia are all negative.

The thymus is enlarged, measuring 9 x 11 x 2 cm., but no other abnormality is noted. There is no general lymphatic hyperplasia. The brain and cord were not examined.

Smears made from the exudate in the pharynx and from the purulent discharge in the bronchi and trachea show staphylococci. The cultures show *Staphylococcus Aureus*. No diphtheria bacilla are seen in either cultures or smears.

Anatomic Diagnosis.—Acute lobar pneumonia of left lower lobe.

Acute fibrinous inflammation of the pharynx.

Microscopic Description.—The heart muscle fibers are slightly swollen, but otherwise negative.

The lung tissue is everywhere filled with an exudate composed mainly of polynucleated together with some desquamated alveolar epithelium, red blood cells and fibrin. The alveoli are dilated and for the most part their walls are completely obscured by the exudate which fills them. There is everywhere much congestion of the blood vessels and some few cells in the alveoli are swollen and filled with yellow pigment granules of haemogenous origin. There is no thickening of the pleura.

The liver capsule is not thickened. The cells are somewhat cloudy and granular. The central veins are dilated and engorged with blood and the adjacent capillaries are likewise congested.

The spleen shows no capsular thickening. The trabeculae are not prominent. The pulp shows an abnormal amount of red cells. The Malpighian bodies are enlarged to twice their normal size and contain numerous large, round, pale cells at their centers. The more centrally located of these cells, those surrounding the central vessel, are degenerated and the nuclei stain very lightly.

The kidneys show slight swelling of the epithelial cell protoplasm in the convoluted tubules. The blood vessels are everywhere engorged.

The pancreas, thymus and adrenals are negative.

Sections through the fibrinous exudate on the uvula and pharynx reveals a most interesting point. There is a good deal of degeneration and necrosis of the epithelium and, to some extent, of the underlying tissues as well. In many places the epithelium is entirely denuded and lying in masses in the meshes of the fine fibrinous exudate which covers the whole surface. There are many leucocytes and also much amorphous detritus in the exudate as well. The subjacent tissues show congestion of the blood vessels, the mucous glands are hypertrophied and their cells evidently actively secreting.

Paraffin sections of this portion were made and stained by Gram's method. These showed that the exudate upon the surface contain two different types of bacteria. The outer portion of the exudate is filled with numbers of Gram-positive cocci, for the most part consisting of staphylococci but showing some pneumococci as well. Beneath these in a layer involving the surface of the pharyngeal epithelium and the deeper portions

of the exudate are found large numbers of bacilli. They are Gram-positive also and correspond morphologically to *B. diphtheriae*. These bacilli exhibit forms analogous to nearly every known variety of the diphtheria bacillus. The bi-polar and barred forms predominate but there are also numbers of the double lance head and large solid-staining spindle shaped organisms. The location of these bacilli in the deep layers of the exudate and under the situation of the cocci seems to indicate that the latter was a subsequent infection and that the growth of the diphtheria organisms was not a very vigorous one and easily overwhelmed by the coccal invasion. This fact also probably explains the absence of *B. diphtheriae* in the cultures and smears taken at autopsy.

Revised Diagnosis.—Acute pharyngeal diphtheria. Acute lobar pneumonia of the left lower lobe. Chronic passive congestion of the liver and kidneys. Acute splenic tumor. Cloudy swelling of the kidneys.

CASE II.—F. R. C., admitted when ten days old with ophthalmitis neonatorum which resisted treatment for some weeks. At the age of three months she developed a typical lenticular rash and snuffle and specific treatment was commenced. The family history was lenticular on both father's and mother's side.

The onset and course of the disease which caused the death of this child were nearly identical with those of Case I. The course of the disease was shorter by some hours. The symptoms were comparatively slight until shortly before death, when they became suddenly and extremely exacerbated and the child died before aid of any moment could be given. There were here, again, great suffocation and extreme edema of the pharynx and larynx, producing absolute occlusion and precluding intubation. The results of the autopsy follow.

F. R. C., aged 1 yr. Troy Orphan Asylum. Service of Dr. Stillman. Coroner's case. Died January 21, 1910, at 9 A. M. Autopsy January 21, 1910, at 3:30 P. M.

The body is that of a poorly nourished white female infant, measuring 64 cm. in length. The body is still warm. The pupils are equal and mid-wide. Rigor mortis is slight. The anterior fontanelle is open. Slight post mortem lividity in the dependent portions. No skin eruption is visible. There are no lymphatic enlargements, no rachitic rosary, no vaginal discharge, no enlargements of the epiphyses.

The abdomen contains no free fluid or adhesions. The mesenteric lymph nodes are not enlarged. The viscera all seem normal.

Thoracic Organs.—The pericardial sac is negative. The heart and great arteries are entirely negative. The foramen ovale is closed.

The upper lobe of the left lung is negative. The lower lobe in the outer and posterior portion shows a consolidation sharply marked off, both in consistency and appearance. On section the upper lobe is slightly congested, especially at its lower border. The lower lobe in the consolidated portion is dark colored, dry and granular and closely suggests hepaticized tissue. A muco-purulent, frothy fluid exudes from the bronchi. The

bronchial mucous membranes show a slightly purulent exudate and some congestion of the blood vessels.

The right lung shows a patch of consolidation at the apex and extending along the posterior border to the hilum. There are also a few smaller areas in the upper lobe that do not crepitate and similar areas in the middle lobe. The lower lobe is everywhere crepitant. The bronchial mucous membranes are reddened and exude a frothy fluid.

Abdominal Organs.—The spleen is not enlarged, the capsule is smooth and the consistency soft. On section, the Malpighian bodies are prominent and the pulp is friable.

The liver, kidneys, adrenals, pancreas, stomach, intestines, bladder and genitalia present no noteworthy abnormalities.

The thymus extends down over the pericardium. It surrounds the carotid arteries, but compresses neither them nor the trachea. It is apparently unchanged. The pharynx, larynx and trachea show no lesions save a slight hyperaemia.

Anatomic Diagnosis.—Acute lobar pneumonia of both lungs. Acute Splenic Tumor.—Cultures taken from the lungs and spleen on blood serum show an abundant growth in 24 hours. This proves to be a Gram-positive bacillus which is culturally and morphologically *B. diphtheriae*. Gram-positive bacilli are found in blood serum cultures from the liver, which, however, cannot be identified under the microscope though they are culturally like *B. diphtheriae*. Growths on agar from the lungs and spleen show a pure culture of *B. diphtheriae* after 48 hours. Agar cultures from the liver give no growth.

Inasmuch as the cultures revealed the presence of the bacillus, no effort was made to demonstrate them in the tissues.

Microscopic Description.—The alveolar structure of the lung is almost obliterated by the diffuse infiltration of polynuclear leucocytes, round cells, fibrin and red cells. The bronchi are filled with a similar exudate in many places and shows much desquamation of epithelium. The pleura is unaffected.

The liver is normal.

The spleen exhibits no capsular thickening. The trabeculae are not prominent. The pulp is overcrowded with red cells. The Malpighian bodies are numerous and enlarged. A slight amount of dark yellowish pigment is scattered through the pulp and is entirely intracellular.

The capsule of the kidneys is not thickened. The glomeruli and tubules are normal. Some congestion of the blood vessels is seen throughout the sections.

The adrenals, thymus and lymph nodes are normal.

Revised Diagnosis.—Acute laryngeal and pharyngeal diphtheria. Acute lobar pneumonia due to *B. diphtheriae*. Acute splenic tumor.

CASE III.—L. A. H., admitted to the asylum when one day old, on November 3, 1909, had a sad and checkered history. When three weeks old she was discharged for adoption, but family complications necessitated her return one month later. She was apparently in good health, and on

January 18, 1910, was adopted into another family. While there, however, she developed what proved to be hereditary syphilis and she was brought back at the end of two weeks by her irate foster parents. She was readmitted and appropriate treatment was begun at once but no improvement was noted by the time of her death, which was two weeks later. There were absolutely no other symptoms than those referable to her luetic condition. A family history of syphilis could not be elicited.

She was taken sick on February 15, 1910, at about midnight. The onset was sudden and was characterized by cough, difficulty in swallowing, a temperature of 99.5, good pulse and only slightly rapid respiration. The fever gradually increased during the disease until at its highest it was 101.2. The day after the onset she developed signs of bronchopneumonia of the right lung. Her condition continued about the same until a few hours before death. At that time, as was the case in both the other instances, the symptoms grew rapidly worse, the laryngeal obstruction being the most prominent and causing death from suffocation.

The autopsy revealed the following:

L. A. H., aged 3½ months. Troy Orphan Asylum. Service of Dr. Stillman. Died February 17, 1910, at 11 A. M. Autopsy February 18, 1910, at 10 A. M.

The body is that of a white female infant 55 cm. in length. Rigor mortis marked, post-mortem lividity of dependent parts. Several small crusts and pinhead sized excoriations on the right cheek and about right ear, not unlike herpes. Pupils moderately dilated and equal. No rash. No edema.

The abdomen has a fairly developed panniculus adiposus. The intestinal coils are distended and the peritoneal surfaces smooth. The diaphragm reaches the fifth rib on either side. There are no adhesions and no fluid. The appendix is normal. The mesenteric lymph nodes are somewhat enlarged.

Thoracic Organs.—The pleuræ and pericardium are negative.

The heart muscle is pale but firm. The valves and chambers are negative.

The left lung is negative apart from a slight hypostatic congestion in the posterior portion.

The right lung is smooth and of good color on the surface. On palpation, however, one feels a large nodule of firmer consistency than the rest of the lung in the upper part of the lower lobe. Another and smaller one is felt near the apex. No crepitation can be elicited from either nodule. On section of the lung tissue, these areas are raised above the surrounding substance and are hard, airless, dark reddish brown to yellowish in color, dry at the center and moister at the edge. There are several smaller nodules about the periphery of each of these which, in all respects correspond to the larger ones. They are all deep seated and surrounded by relatively normal lung tissue.

The thymus is not enlarged.

Abdominal Organs.—The spleen is normal and grayish in color. The pulp, on section, is congested and the Malpighian bodies are enlarged and prominent.

The kidneys are both alike in all essentials. They are large and pale, show the remains of foetal lobulations and the capsules strip easily, leaving a smooth surface. On section, the cut surface is noticeably pale, but otherwise normal.

The adrenals are apparently normal.

The liver, on the outer surface, appears normal. On section, the lobules are pale in the center, but the lobular outlines are not clear.

The gall bladder is negative.

The tongue, larynx and pharynx are removed together. There is a light colored fibrinous exudate over the uvula and both tonsils, but it is not very thick nor adherent. The larynx exhibits a light cream colored exudate extending from below the epiglottis down to the cords. No edema is visible in either location.

Smears and cultures from the exudate and from the lungs show *B. diphtheriae*.

Microscopic Description.—The epithelium of the larynx has entirely disappeared and supplanting it is an exudate composed of necrotic tissue and fibrin, thickly infiltrated with polynuclear leucocytes. Scattered through the exudate are numerous blue staining, granular masses, apparently colonies of bacteria. Under the oil immersion lens, large bacilli are seen in great numbers on the surface of the exudate, which resemble *B. diphtheriae* but, owing to the lack of proper staining, cannot be positively identified as such.

The heart is negative.

The lung shows everywhere an active congestion of the blood vessels. About the bronchioles, many areas of lung tissue are seen to be filled with polynuclears and necrotic debris. These areas are composed of ten or more alveoli in a group and these groups are scattered over the greater part of the sections. The alveoli immediately surrounding these groups are filled with red cells and serum, for the most part. The bronchi are filled with a similar exudate in which masses of desquamated columnar epithelium are visible. Some groups of alveoli, noticeably near the large blood vessels contain cells packed with golden brown pigment granules. Throughout the lung tissue unaffected by the pneumonic exudate, patches of atelectasis alternate with compensatory emphysema. The pleura is unchanged.

The liver shows some fatty infiltration, but is otherwise negative.

The renal capsule is normal. The cortex reveals many areas of interstitial infiltration with round cells. The epithelium of the convoluted tubules is infiltrated in nearly all portions with innumerable small hyaline granules which appear to have entirely destroyed the cell structure and filled the lumen with these small bodies. Save for this change, the kidneys are negative.

The thymus, adrenals, bladder and genitalia are negative.

The intestines show an hyperplasia of the solitary follicles.

The mesenteric lymph nodes show endothelial hyperplasia as well as general hypertrophy.

Revised Diagnosis.—Laryngeal and pharyngeal diphtheria. Bronchopneumonia due to *B. diphtheriae*. Acute splenic tumor. Fatty infiltration of the liver. Acute interstitial and parenchymatous nephritis. General lymphatic hyperplasia.

The meagerness of the clinical histories in all three of these cases sufficiently attest their extremely short duration. The short accounts given tell the entire essential history. The march of events was so rapid that in the first two cases there was no time given for more than the utmost necessities of emergency treatment. In both of these antitoxin was administered as a routine measure and forlorn hope but with no real idea that diphtheria was the true diagnosis. Diagnostic cultures were not taken in the first two cases for the same reason. In the last case a throat culture was taken but the child was dead before it had developed sufficiently for examination. The edema, too, was extremely dense and of a peculiar, almost stony hardness. It was unlike anything that those of us who saw the cases had ever seen, rendering intubation absolutely impossible.

In Case I, the course and symptoms together with the negative results from the post mortem cultures and smears, the doubtful nature of the membrane found at autopsy (which might have been accounted for by injury from the attempted intubation) and, moreover, the presence of pneumonia in the pathologic picture, threw us off from the true state of affairs. It was considered to be a case of pneumonia producing overwhelming toxic symptoms with edema of the glottis. With the advent of Case II so like the first in onset, course, exitus and pathologic findings and in which the post mortem cultures from the throat, lungs and spleen were all positive, we were more suspicious of the true nature of the first. We therefore put through the sections of the pharyngeal exudate from Case I by Gram's method which showed the presence of *B. diphtheriae*.

After the enlightenment we received from Case II, we realized that prompt action was necessary in order to avert further infections if possible. Cultures were taken from all babies and nurses and from every helper who came in contact with the infant pavilion in any way. Cultures were taken from the nose also in any child having the slightest nasal discharge. Twenty-six cultures

were taken and, of these, twenty-five were negative and one positive.

The child from whom this positive culture came was a boy about eleven years of age, an inmate of the Asylum, who had been given quarters in the infant pavilion as a helper to do small odds and ends of work. He was a clean, bright, healthy, sensible youngster and had access to all the babies in the pavilion and used to amuse them during the play hours, even carrying them about in his arms. He had had absolutely no symptoms of diphtheria at any time. He was at once given 1500 units of antitoxin and placed in the isolation ward of the Samaritan Hospital. An interesting fact was brought to light at his physical examination on admission, when it was found that he had a complete situs transversus, his heart, spleen and stomach being on the right side and his liver on the left. Dr. Davidson, who discovered the condition, reported this discovery at the time to the Rensselaer County Medical Society.

The outcome of the cultures and the finding of the carrier of course determined that immunizing doses should be given to everyone in the pavilion, so 500 units were administered to each baby and 1000 to each nurse and helper. The babies were carefully watched for any signs of the disease, but, none appearing, the incident was felt to be closed.

It was just after this and while our carrier was confined in the hospital for the required negative cultures that Case III was readmitted, brought back from her unsuccessful attempt to find a home, with the diagnosis of syphilis. Since the fumigation had been thorough and no further indications of diphtheria had made their appearance, it was not thought necessary to give her a preventive inoculation.

About two weeks after this, however, she was taken ill with the primary symptoms of a frank bronchopneumonia. At the first suggestion of a diphtheric symptom she was immediately given 1000 units of antitoxin and the next morning 2000 more. Neither this nor intubation proved of any avail and she died with the same symptoms which characterized the other two. The whole pavilion was again thoroughly cleaned and fumigated and after that no more cases developed. What caused the development of this third case, apart from inadequacy in the first fumiga-

tion, it is difficult to say, since the child did not come in contact with the carrier at any time.

Virulence tests on guinea pigs were carried out with these cultures and their pathogenicity found to be nil. The pigs gave every promise of completely withstanding the infection, for they gave no sign of illness at any time. The bacillus was recovered in every instance from their bodies and gave absolute cultural and morphologic proof. It is to be regretted that these cultures were not passed on through other pigs in order to ascertain if they increased to any extent in pathogenicity by this passage through an intermediate host. This low virulence seems to characterize the cultures from nearly all carriers. This fact is brought out in the paper of Slack, Arms, Wade and Blanchard (*J. A. M. A.*, 1910, *LIV*, 951). Out of 8118 cultures on supposedly normal persons, seventy-nine were positive. Of these seventy-nine cultures, all of which were tested, not one was found to have any pathogenicity but the weakest. "While it is possible," they say, "that by passing through a susceptible individual their virulence might be raised to cause the disease, this is not a frequent occurrence." In the present instance, the fact that none of the healthy babies succumbed to the infection, seems additional proof of the feebleness of the strain. That any did become infected is explained, to my mind, by the fact that we had to do here with constitutions enervated by congenital syphilis, poor in resistance and powerless to combat an otherwise harmless strain of organisms.

The presence among these of a case of what was apparently a true septicaemia due to *B. diphtheriae* is worthy of mention. Instances of such septicaemia are rarely reported in the literature and, indeed, until a short time ago it was held that it never occurred.

The failure of the cultures in Case I to show the diphtheria bacillus was due either to a secondary or agonal infection or to a mixed infection from the first. The arrangement of the bacilli in a zone underlying the cocci, as shown in the Gram tissue stains, inclines one to the former view.

For an explanation of the peculiarly deadly nature of the throat symptoms in all these cases we may look to the luetic condition once more, or we may simply say that, in diphtheria of all grades

of severity, complications of edema are met with and attempt no further explanation.

This report points out one fact clearly. The presence in an institution of a carrier of an attenuated strain of *B. diphtheriae* need not be productive of harm to any of the healthy inmates under ordinarily good sanitary conditions. I think it will be generally agreed that, had these children been free from the undermining influences of their luetic condition, they and all the others would probably have come through scathless without any attention to isolation, immunization or fumigation. This view is, it is true, a most dangerous one to take under any interpretation but the strictest. There are limiting facts always before us. The poor in constitution, like the poor in purse, we have always with us. It is to them we must look for the evil effects of any tendency toward a laissez faire attitude on the part of the profession. The possibility that an originally weak bacterial strain may be activated by passage through an intermediate human host and the other possibility that the original strain in the carrier may not be so inert as seems generally the case, should be always in mind. This offers food for thought alike on the part of those at the head of institutions and those in outside practice. In the former situation control is possible with care and forethought. In the latter, the question is extremely difficult or impossible of solution. In either case it merits careful consideration.

Editorial

It is incontestable that a long beard contributes greatly to health, because, whilst it draws off the superfluous humours which nourish this mark of manhood, it preserves the teeth a long time from rotting, and strengthens the gums, an advantage which those who shave are generally deprived of, who, almost all, are tormented with a dreadful pain in the teeth, and lose them all before they are any way advanced in age. The beard, in summer defends the face from the burning rays of the sun; and in winter from rimes. In short, it preserves a man from a number of disorders, such as the quinsey and the decay of the palate, etc.

Pro Sacerdotum Barbis

PIERIUS VALBRIANUS

The Serum
Diagnosis of
Pregnancy.

One of the most important and useful diagnostic measures resulting from serological study is that discovered recently for the determination of pregnancy. The new test devised by Abderhalden is based on the ferment action of blood serum. It has been observed that protein substances injected into the blood of dogs and rabbits cause the development of proteolytic ferments within the serum. Even cane sugar injected into dogs, intravenously, will cause an appearance of invertin in the blood serum. This may appear as early as fifteen minutes after the injection. In other words, the introduction of proteins, carbohydrates, and fats directly into the circulation calls forth enzymes, which denaturize the foreign bodies by a process of digestive disintegration. Similarly, the escape into the maternal circulation of cells or other products of the placenta, gives rise to enzyme production within the maternal serum. The new test depends upon the determination of the digestive action of blood from pregnant women on placental protein.

Petri, in the *Zentralblatt für Gynakologie*, (No. 7, February 15, 1913), discusses Abderhalden's discovery and its value in early pregnancy. He points out the limitations of the diagnosis of pregnancy during the first half, and believes the serum test of Abderhalden removes the difficulty. This test indicates the presence of a proteolytic enzyme within the blood serum of the mother. This proteolytic enzyme acts upon the protein derived from the placenta. It is believed that cells from the chorionic villi, and even from the trophoblast produce enzymes within the maternal blood. Schmol has shown the presence of syncytial elements in the pulmonic vessels in a case of eclampsia. The production of enzyme is protective in character. There are two methods for performing Abderhalden's test:

Method 1. A five per cent solution of the placenta in distilled water is prepared. One cubic centimetre of serum from a pregnant woman is mixed with one cubic centimetre of the placental solution in a test-tube. The test-tube is incubated at body temperature. The tube is then examined with the polariscope. The breaking down of the protein molecules will cause an increased rotation of rays of polarized light.

Method 2. The placenta after being washed clean of blood is boiled and cut up into small pieces. One gram of the coagu-

lated placental tissue is added to one and a half cubic centimetres of haemoglobin-free serum derived from a pregnant woman. The mixture is then received within a dialyzing membrane and placed into twenty cubic centimetres of distilled water. The containers are then incubated for 16 hours. At the end of this time, ten cubic centimetres of the dialysate is tested with two-tenths cubic centimetres of a one per cent aqueous solution of ninhydrin. Ninhydrin gives a blue color in the presence of peptone and amino acids. The appearance of a blue color upon boiling the dialysate with ninhydrin is regarded as positive. Control tests are also run through.

The author has performed three hundred tests and obtained positive reactions in cases one month along up to the end of pregnancy. Five cases were positive four days after abortion, and nine cases were positive one to eight days of the puerperium.

The author is of the opinion that the test may be positive as early as the first day after the fertilization of the ovum. He bases this opinion on the appearance of invertin in the blood serum of animals fifteen months after intravenous injection of cane sugar.

H. S. BERNSTEIN.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.
ABSTRACT OF VITAL STATISTICS, MARCH, 1913.

Deaths

Consumption.	34
Typhoid fever	2
Scarlet fever	0
Measles.	0
Whooping-cough.	1
Diphtheria and croup.	3
Grippe.	4
Diarrheal diseases	6
Pneumonia.	12
Broncho-pneumonia.	4
Bright's disease	16
Apoplexy.	5

Cancer	9
Accidents and violence.	11
Deaths over 70 years.	33
Deaths under 1 year.	19
Total deaths	193
Death rate	22.71
Death rate less non-residents.	19.30

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital	14	10
Albany Orphan Asylum.	0	0
Child's Hospital	0	0
County House	8	2
Home for the Friendless.	0	0
Homeopathic Hospital	5	1
Hospital for Incurables.	2	0
House of Good Shepherd.	1	0
House of Shelter.	0	0
Little Sisters of the Poor.	2	0
Public Places	4	3
St. Margaret's House.	2	0
St. Peter's Hospital.	16	5
Austin Maternity Hospital.	3	1
Albany Hospital, Tuberculosis Pavilion.	7	6
Labor Pavilion	1	0
Totals.	65	28
Births.	177	
Still Births	6	
Premature Births	3	

BUREAU OF PLUMBING, DRAINAGE AND VENTILATION.

In the Bureau of Plumbing, Drainage and Ventilation, there were two hundred eight inspections made of which fifty-two were of old houses and one hundred fifty-six of new houses. There were forty-three iron drains laid, thirty-six connections to street sewers, twenty-eight tile drains, forty-two cesspools, fifty-two wash basins, sixty-four sinks, forty-eight bath tubs, fifty-two wash trays, eighty-nine tank closets. There were one hundred forty-five permits issued, of which ninety-one were for plumbing and fifty-four for building purposes. Forty-five plans were submitted, of which sixteen were of old buildings and twenty-nine of new buildings. Twenty-eight houses were tested, three with peppermint and twenty-five water tests. Sixteen houses were examined on complaint and seventy-six re-examined. Nine complaints were found to be valid and seven without cause.

BUREAU OF CONTAGIOUS DISEASE,
Cases Reported.

Typhoid fever	2
Scarlet fever	10
Diphtheria and croup	6
Chickenpox	4
Smallpox	0
Measles	91
Whooping-cough	0
Consumption	28
 Totals.	 141

REPORTED

<i>Contagious Disease in Relation to Public Schools.</i>	D.	S.	F.
Public School No. 12	I	.....
Public School No. 16 . . . . .	.....	I	
Academy of Holy Names . . . . .	.....	I	

Number of days quarantine for diphtheria:

Longest. 21 Shortest. 9 Average. 13 6/7

Number of days quarantine for scarlet fever:

Longest. 14 Shortest. 14 Average. 14

Fumigations:

Houses.	48	Rooms.	172
Cases of diphtheria reported.			6
Cases of diphtheria in which antitoxin was used.			5
Cases in which it was not used.			1
Deaths after use of antitoxin.			3

TUBERCULOSIS

Bender Laboratory Report on Tuberculosis.

Positive.	4
Negative.	18

Total.	22
Living cases on record March 1, 1913.	296

Cases reported during March:

By card	24
Dead cases by certificate.	4

— 28 —

Total.	324
Dead cases previously reported.	30

Dead cases not previously reported.	4
Recovered.	1

Removed.	3
— 38 —	

Living cases on record April 1, 1913. 286

PUBLIC HEALTH

Total tuberculosis death certificates filed during March.....	34
Out of town cases dying in Albany:	
Albany Hospital	1
Albany Hospital Camp.....	6
County Hospital	1
	—
Net city tuberculosis deaths.....	8
	—
Net city tuberculosis deaths.....	26

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive.	11
Initial negative.	144
Release positive.	3
Release negative.	64
Failed.	29
	—
Total.	251

Test of Sputum for Tuberculosis.

Initial positive.	9
Initial negative.	28
Failed.	2
	—
Total.	39

BUREAU OF MARKETS.

Market inspections	37
Public market inspections.....	8
Fish market inspections.....	2
Packing house inspections.....	2

MISCELLANEOUS.

Inspections of mercantile establishments.....	297
Mercantile certificates issued to children.....	22
Factory certificates issued to children.....	10
Children's birth certificates on file.....	32
Number of written complaints of nuisances.....	32
Privy vaults	0
Closets.	2
Plumbing.	8
Other miscellaneous complaints.....	22
Cases assigned to health physicians.....	72
Calls made	143
Number of dead animals removed.....	299

Society Proceedings

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

A regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College on January 21, 1913.

The meeting was called to order by President Neuman at 8.40 p. m.

Those present were: Drs. Allen, Aldrich, A. J. Bedell, Bendell, Curtis, DeVoe, Drake, Draper, Druce, Gutmann, C. G. Hacker, Hinman, Haswell, C. L. W. Hacker, Jenkins, Lanahan, Lomax, Lewi, MacFarlane, J. Meyers, C. H. Moore, Neuman, Rooney, Rulison, Traver, E. A. Vander Veer, J. N. Vander Veer, Vibbard, Ward.

The secretary announced that the Board of Censors had recommended the names of Dr. Davis Baker and Dr. A. C. Worth for election to membership in the Society.

The Chair appointed Drs. TRAVER and E. A. VANDER VEER as tellers and the two names were balloted upon separately. The tellers announced that each name had received the necessary majority and Dr. Baker and Dr. Worth were declared duly elected to membership.

The secretary announced that Dr. Happel who had been dropped for non-payment of dues had settled up his arrears and asked to be reinstated. A motion was made to this effect. Seconded and passed.

Upon certification by the secretary of the Steuben County Medical Society that Dr. L. H. Gaus, now of this city, was a member in good standing of that society he was duly transferred to membership in this Society on motion.

It was moved by Dr. ROONEY and seconded that the present delegates of the Society hold office till the next regular time for their election. Passed.

Scientific program:

Dr. E. E. HINMAN read a paper on "The Middle Turbinate and the Eye." The discussion was opened by Dr. A. J. Bedell and was taken part in by Dr. Stapleton.

Dr. A. H. TRAVER read a paper on "Why Patients Die After Operation." This paper was discussed by Drs. Gutmann, Hinman, Van Loon, Jenkins, J. N. Vander Veer, Rooney and Traver.

The last paper was read by Dr. E. A. Vander Veer on "Should Newspapers have a Medical Editor." The discussion of this paper was participated in by Drs. Neuman, Rooney, Ward, MacFarlane, Gutmann, Curtis and Rulison.

The meeting was adjourned upon motion after which a buffet lunch was served.

EDWIN L. DRAPER, *Secretary.*

A regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College March 4, 1913.

Meeting was called to order by President Neuman at 8.45 p. m.

Those present were: Drs. Baker, Bellin, Benson, Blair, Classen, Cook, Curtis, DeVoe, Drake, Draper, Druce, Fromm, Gorham, C. G. Hacker,

C. L. W. Hacker, Happle, Hannock, Jenkins, Kemp, Herrick, LeBrun, Lomax, Lyons, J. Meyers, Mount, Neuman, Rooney, Rulison, Stapleton, Vibbard.

Moved and seconded that the minutes of the previous meeting be approved as printed. Passed.

Moved by Dr. ROONEY and seconded that the name of the present so-called "Milk Committee" be changed to the "Milk Commission" in order to conform to the State law. Passed.

Moved by Dr. JENKINS and seconded that the new schedule of requirements for certified milk be printed and circulated among the members of the Society. Passed.

Moved by Dr. ROONEY and seconded that the secretary express to the Department of Agriculture the appreciation of the Society for the assistance rendered in formulating the new milk regulations. Passed.

Moved by Dr. MEYERS and seconded that the secretary be instructed to communicate with the managers of the various theaters of Albany, requesting them to provide individual drinking cups for their patrons. Passed.

Dr. RULISON said that he was informed by Dr. Rooney that the Empire Theater already did this.

Dr. CURTIS said that some years ago he had collected a number of portraits of deceased members. He had collected a good many. They were not all very good looking but they helped to keep alive the memory of our members who have passed beyond. This plan seemed to him meritorious. When the Society was turned out of the old room where they used to meet these pictures were gathered and moved out and disappeared. Some of them were valuable. His attention was called to this subject by the receipt, within a few days, of another portrait, and this, one of our oldest members, Dr. Elias Willard. He came to Albany at the beginning of the last century. He was a charter member of this Society and was prominent enough to have been elected an honorary member of the Massachusetts State Medical Society. This picture is a copy of an oil portrait. It is in good condition but needs a frame and ought to be taken care of. It was moved by Dr. Curtis that the secretary be requested to acknowledge the receipt of this portrait to Mr. E. K. Willard, Greenwich, Conn. Passed.

Dr. LOMAX moved that a committee be appointed to look up the old portraits and to hang them upon the walls of the meeting room of the Society. Seconded. Passed.

President Neuman appointed Drs. Curtis, Lomax and Blair to serve on this committee.

Dr. C. G. HACKER made the suggestion that the Society bear in mind that some medical societies had their own buildings, and that this Society ought to begin to do some thinking along this line. Not that there was any immediate necessity for a building of this kind, still it would be well to prepare for the future.

Dr. JEROME MEYERS read a paper on "Two Cases of Pancreatic Lesions, with Presentation of Patients."

Discussion of this paper was taken part in by Drs. Benson, Jenkins, Gorham and Happle.

Dr. F. L. CLASSEN read a paper on "The Effects of Exertion on Angina Pectoris, with Report of a Case."

This paper was discussed by Drs. C. G. Hacker, Jenkins, Rooney, Gorham and Worth.

Dr. H. H. DRAKE read a paper on "Oxygen-nitrous Oxide Anaesthesia," which was discussed by Dr. Bellin.

Meeting was adjourned upon motion, after which a light lunch was served.

EDWIN L. DRAPER, *Secretary.*

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR MARCH, 1913.—Number of new cases, 157; classified as follows: Dispensary patients receiving home care, 3; district cases reported by health physicians, 6; charity cases reported by other physicians, 62; moderate income patients, 65; metropolitan patients, 24; old cases still under treatment, 222; total number of cases under nursing care during month, 379. Classification of diseases for the new cases: Medical, 40; surgical, 12; gynecological, 2; obstetrical under professional care, mothers 42, infants 43; infectious diseases in the medical list, 18. Disposition: Removed to hospitals, 23; deaths, 21; discharged cured, 111; improved, 44; unimproved, 42; number of patients still remaining under care, 138.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 9; nurses in attendance, 4; patients carried over from last month, 0; new patients during month, 11; patients discharged, 9; visits by head obstetrician, 8; the attending obstetrician, 3; students, 49; nurses, 83; total number of visits for this department, 143.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,408; for professional supervision of convalescents, 588; total number of visits, 1,996; cases reported to the Guild by 3 health physicians, and 50 other physicians; graduate nurses 9, and pupil nurses 6 on duty.

Dispensary Report.—Number of clinics held, 84; new patients, 139; old patients, 317; total number of patients treated during month, 456. Classification of clinics held: Surgical, 11; nose and throat, 8; eye and ear, 16; skin and genito-urinary, 8; medical, 12; lung, 11; dental, 0; nervous, 0; stomach, 0; children, 10; gynecological, 8.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—The regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College, Wednesday, April 9, 1913, at 8.30 p. m.

Scientific program: "The Present Status of Renal Functional Tests with Especial Reference to Phenolsulphonphthalein," Dr. N. K. Fromm and Dr. J. F. Southwell. "The Surgical Aspect of Certain Types of Bone and Joint Lesions, with Lantern Slide Demonstration," Dr. J. L. Bendell.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The regular meeting of the Medical Society of the County of Schenectady was held at the County Court House on Tuesday evening, April 8, 1913, at eight o'clock.

The following program was presented: "Medical Aspects of Eugenics," Dr. C. C. Duryee; "The Most Effective Method of Asexualization of the Male," Dr. W. P. Faust; "The Most Effective Method of Asexualization of the Female," Dr. H. P. Groesbeck.

NEW YORK SKIN AND CANCER HOSPITAL.—A course of Clinical Lectures and Demonstrations will be given on Wednesday afternoons, from April 2nd to May 7th inclusive, at the New York Skin and Cancer Hospital by Dr. Bulkley and Surgical Treatment of Malignant Diseases, on May 14th, by Dr. Bainbridge.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The regular annual meeting of the Medical Society of the State of New York will open in Convention Hall, Rochester, N. Y., at 11 A. M. Tuesday, April 29th when Dr. John G. Adami will deliver the Annual Oration on Medicine "Certain Elementary Concepts in Education Applied to Medicine." President Dr. F. W. Whitbeck will deliver his address. The meeting will be divided into five sections: Medicine, Surgery, Eye, Ear, Nose and Throat, Pediatrics, Obstetrics and Gynecology.

SCHOOL INSPECTION IN ALBANY.—Dr. Clinton P. McCord was recently appointed Chief Medical Inspector of the public schools of Albany with four graduate nurses as assistants.

On April 17th, the system which had been inaugurated several days before was extended to all the schools and the city divided into districts with a nurse for each district.

By the end of the school term it is expected that a physical examination will have been made and a permanent record kept of all the first grade children.

ALUMNI ASSOCIATION OF THE ALBANY MEDICAL COLLEGE.—The annual meeting of the Alumni Association of the Albany Medical College will be held May 27, 1913.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The ninth triennial session of the Congress of American Physicians and Surgeons will be held at Washington, D. C., May 6 and 7, 1913.

FOURTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.—The meeting of the Fourth International Congress on School Hygiene will be held at Buffalo, N. Y., August 25 to 30, 1913. The Committee on Scientific Exhibit of the Congress is preparing to make as complete an exhibit as possible of the results of scientific investigations bearing on the problems of School Hygiene.

Your cooperation is requested by forwarding immediately to the Chairman the following information relative to your researches:

1. A brief summary of the results of each of your investigations, which have a significant bearing on any phase of School Hygiene or School Sanitation.
2. A brief description of the methods employed in each separate investigation.
3. Send one copy of each book or published article, in which the results of your work are set forth.
4. Any suggestion you may make with reference to an effective method of exhibiting your results will be thankfully received.

CIVIL SERVICE EXAMINATIONS.—The New York State Civil Service Commission will hold examinations on May 13, 1913, for the purpose of filling vacancies in the following positions: Assistant medical officer in the Health Officers' Department of the Port of New York, at a salary of \$1,500. This position is in the detention and hospital service at the quarantine station, Staten Island, N. Y., and requires a knowledge of cholera, plague, yellow fever, smallpox and epidemic cerebrospinal meningitis. The examination is open only to licensed medical practitioners of the State of New York. Candidates will not be required to appear at any place for written examination but will be rated on their age, education, experience (particularly with the quarantinable diseases) and personal qualifications as shown by their sworn statements and by answers to such inquiries as the Commission may direct to proper sources of information among persons acquainted with their qualifications.

Physician in the New York State Training School for Girls, Hudson. Examination open to women who are licensed medical practitioners in this State, who have graduated from a registered medical school, and who since graduation have had one year's experience on the resident medical staff of a general hospital, or in a State hospital or institution, or have been engaged for three consecutive years in the practice of medicine. Subjects of examination and relative weights: Written examination covering anatomy and physiology, hygiene, bacteriology, and pathology; materia medica and therapeutics (drug, psychic, electric and physiologic); surgery, obstetrics and gynecology; internal medicine and diseases of children; diseases of the mind and nervous system; diseases of nose, throat and skin, 6; education experience and personal qualifications, 4.

A vacancy exists in the position of assistant physician at \$1,000 per annum and maintenance, increasing to \$1,200 and in the position of physician at \$1,500 to \$1,800 and maintenance.

Medical Superintendent in the Oneida County Hospital at Rome, at a salary of \$2,500 and maintenance for the superintendent and his family. Candidates must be well educated physicians, graduates of legally chartered medical colleges, with an experience of at least six years in the actual practice of medicine, including at least one year's actual experience in a hospital. Subjects of examination and relative weights: Questions relating to hospital management, including the purchase of supplies, 3; questions on general medicine, surgery and hygiene, and the treatment of tuberculosis, 3; education and experience, 4. In connection with the rating of the last subject, candidates may be summoned to Rome for an interview with the examiners. Special credit will be given for actual experience as executive head of a hospital. Open to all citizens of the United States, preference in certification being given to residents of the State of New York.

PATENT MEDICINE DAMAGES.—The Court of Appeals recently handed down a decision holding that a druggist who sells a preparation manufactured by others under his own name and label may be held liable for injurious results to a customer buying and using it. The case was that of Fannie E. Willson of Brockport, against Faxon, Williams and Faxon, Buffalo druggists, who sold Mrs. Willson a remedy warranted to contain nothing but vegetable substances. It is alleged the medicine contained calomel and she was made ill and her teeth came out. On the first trial she obtained a verdict of \$2,000 which was reversed and at the next trial the judgment for the defendants was directed by the trial courts.

Judge Willard Bartlett, writing the opinion of the court, said: "The druggist became responsible to the plaintiff for the strength and quality of the preparation, notwithstanding its patented or proprietary character, and, if the compound contained an injurious substance instead of being purely vegetable, as the label declared, the defendants became liable in law for the injuries suffered by the purchaser in consequence of ignorantly taking the concealed poison."

ASSOCIATION OF ORIFICIAL SURGEONS.—The first annual meeting of the Iowa Association of Orificial Surgeons was held at the Savery Hotel, DesMoines, Iowa, March 5th. Dr. E. H. Pratt, of Chicago, Ill., conducted an Orificial Clinic at the DesMoines General Hospital. Eight cases were operated upon, demonstrating the fundamental principles of Orificial Surgery.

THE ACCIDENT RECORD.—The National Highways Protective Society has compiled figures giving the number of traffic accidents in the different cities of the State. For purposes of comparison the figures are reduced to a rate per 100,000 per annum and show for New York City 46, up-State 26, Buffalo 58, Syracuse 17, Rochester 66, Albany 36, Yonkers 85.

These figures include accidents from all kinds of traffic. Of these automobiles furnish about 64 per cent, outside of New York City, street cars about 23 per cent, and wagons and miscellaneous the remainder. In New York City the proportion was about 50 per cent for automobiles and 30 per cent for street cars. The high rate for Yonkers is explained by its proximity to New York and because many highways out of New York pass through it, thus occasioning an automobile traffic greatly out of proportion to its population.

PUBLIC WARNED AGAINST SODA FOUNTAIN.—Dr. Lederle of the Department of Health states that a preparation of soapbark known as saponin is extensively used in this country in making soft drinks. This substance is a powerful poison and unless wholesome substances can be used for producing the foam, it should be shunned. Dr. Lederle states that the shortage of inspectors makes it impossible for the Department of Health to guarantee the purity of soda water drinks and advises the public to avoid them.

INFANT MORTALITY.—An English-speaking Conference for the Prevention of Infant Mortality will be held in London on August 4 and 5, under the auspices of the British National Association and immediately before the opening of the International Medical Congress. The tentative program includes the following: The Responsibility of Central and Local Authorities in Infant and Child Hygiene; The Administrative Control of the Milk Supply; The Necessity for Special Education in Infant Hygiene; Medical Problems in Infant Nutrition; Antenatal Hygiene.

INVESTIGATE RURAL SICKNESS.—The State Charities Aid Association in conjunction with the Poughkeepsie Academy of Medicine is making a careful investigation of conditions in Dutchess County relative to the improvement of methods of caring for the sick.

PERSONALS.—**Dr. CHRISTIAN G. HACKER** (A. M. C. '99), has removed his office from 94 Grand Street to 226 Lark Street, Albany, N. Y.

—**Dr. JOSEPH A. LANAHAN** (A. M. C. '99), has removed from 103 Eagle Street to 166 Hamilton Street, Albany, N. Y.

—**Dr. LELAND O. WHITE** (A. M. C. '01), has been appointed one of the physicians in charge of the New Sharon Springs Sanitarium.

—**Dr. WILLIAM LOW, JR.** (A. M. C. '12), has retired from St. Peter's Hospital and is now engaged in active practice at Richmondville, N. Y.

—**Dr. ARTHUR H. STEIN** (A. M. C. '12), has retired from St. Peter's Hospital and is now connected with the Bender Laboratory.

DIED.—**Dr. JOSIAH HASBROUCK** (A. M. C. '85), since 1886 a practitioner of Port Ewen, N. Y.; sheriff of Ulster county from 1901 to 1903; formerly president of the Ulster County Medical Society; town supervisor in 1895; died in the Astor Sanitarium, New York City, March 25, from diabetes, aged 48.

—**Dr. JOSEPH DAVIS** (A. M. C. '08), of High Falls, N. Y., died April 1, 1913.

In Memoriam**JOSIAH HASBROUCK, M. D.**

Dr. JOSIAH HASBROUCK, of Port Ewen, New York, died on March 25th, at the Astor Sanatorium in New York, at the age of 48 years. He was born in the village of Port Ewen, and resided, and practiced his profession there and in the city of Kingston and neighboring villages ever since his majority. He came of a family of physicians. His grandmother was Ann Oliver of Marbletown, and her grandfather was James Oliver, the first president of the Ulster County Medical Society, a founder of Kingston Academy, a surgeon in the War of the Revolution, and county judge of Ulster County from 1799 to 1805. Ann Oliver became the wife of DuBois Hasbrouck and educated her son Josiah for medicine and surgery, and he graduated from the Albany Medical College in the year 1855. His son, Josiah, the subject of this sketch, following in his father's footsteps, graduated at the Albany Medical College in 1885. The elder Josiah practiced at Port Ewen from 1856 until his death in 1889; the younger Josiah followed him until his death. He was a very skillful surgeon and resourceful doctor, remarkably keen in diagnosis and bold in remedy. He carried into the sick room a sweet, helpful disposition. He was always bright, hopeful, cheerful and philosophical. Sunshine was among his remedies and hope and faith constant prescriptions. He was a natural doctor, and his patients welcomed his visits as though he would unlock the fetters of disease and set them free. He delighted in his profession and adorned it by being a large-hearted, generous and noble man. He knew the truth that "The poor ye have always with you," and his services as a physician, his assistance with provisions, fuel and clothes were unostentatiously given to them.

Dr. Hasbrouck was more than a professional man. He was a public spirited citizen. He acted at one time as president of the Port Ewen Improvement Association and promoted the introduction of many improvements in the village. In 1895 he was chosen supervisor of the Town of Esopus. He was an ardent Republican and was the Republican County Committeeman of his town until his death, a frequent delegate to State conventions, and in control of his party organization in his town and one of the mainstays of the county organization of which for several years his brother Judge Hasbrouck was the leader. In the year 1900 Dr. Josiah Hasbrouck was elected sheriff, and from that time on did not devote the whole of his time to the practice of his profession. He gave an unusually efficient, competent and satisfactory administration of his office. Upon retiring from office he purchased the Sleightsburg ferry and spent in its management, and in the care of his property all of his time not given to his profession.

He was gregarious by nature and loved the society of his fellows. Besides having been president of the Ulster County Medical Society,

commodore of the Rondout Canoe Club, and a member of the State Medical Society, he was a member of the Rondout Club, of Lodge 343 F. & A. M. of Rondout, and of Hope Lodge K. of P. No. 65 of Port Ewen.

Dr. Hasbrouck is a descendant of one of the pioneer families of Ulster county. He is of the seventh generation from Jean Hasbrouck, one of the Huguenot patentees of the New Paltz patent; and of a family which has contributed many distinguished men to the State and country.

Dr. Hasbrouck leaves two children, John H. and Catherine Hasbrouck, and is survived by three brothers, Dr. Walter D. Hasbrouck, Supreme Court Justice G. D. B. Hasbrouck and John M. Hasbrouck, M. D., of Haverstraw.

Speaking of his death, the *Kingston Daily Freeman* said among other things: "Although fully aware of his illness and the probability that it would result in death, Dr. Hasbrouck maintained the cheery, helpful spirit that was his characteristic. The remark with which he opened the last conversation he had with his brother, Justice G. D. B. Hasbrouck, was, 'Good morning, Mr. Justice, what can I do for you?' This jocular, helpful spirit was the keynote in the life of Dr. Hasbrouck and in the greeting quoted was summarized unconsciously the entire life of the man. Giving much, claiming little of gratitude and often receiving less than little of it, he hid the light of his good works, but there is no man in Ulster county whose death could cause more widespread and sincere grief than will be felt among the large circle of those who have so many times in the past looked, and not in vain, in time of need to their friend, 'Dr. Joe.'"

MINOT ALPHEUS STEELE, M. D.

MINOT ALPHEUS STEELE was born in Hudson, N. H., November 19, 1867, where he lived until the death of his father in 1885 when he and his mother moved to Nashua, N. H. He was the older of two children born to Alpheus and Mary A. Steele. He was educated in the public schools of Hudson, the High School of Nashua, the McGaw Institute at Reeds Ferry and graduated from the International Business College of Manchester, N. H., in 1875. He continued to be a student, everything in nature was of interest to him. He entered the office of Dr. Hallenin in Nashua to study medicine with him and continued to during his vacations (until the death of Dr. Hallenin) after he entered Albany Medical College in 1887. He graduated from Albany in 1890, the second youngest of his class of thirty-seven members. He began the practice of medicine with Dr. Josiah Eastman in Hampstead, N. H., in the fall of 1890 where he practiced until the spring of 1892. He married Minnie C. Townsend, a teacher in the public schools of Hampstead, in December, 1891. In the spring of 1892 he moved to Chester,

Vermont, where he practiced until the fall of 1893 when he moved to Rhode Island, going first to Washington, R. I., and from there to Portsmouth, R. I., in February, 1894, where he continued to practice up to the time of his death, February 17, 1913. He was active in all the business affairs of the town, being Medical Examiner, Health Officer, a member of the Town Committee, a member of the Town Council, Chairman of the School Board, Post Master of Eureka Lodge No. 22, A. F. & A. M., Past High Priest of Aquisidneck Chapter No. 9 and a member of the Azab Grotto of Fall River. He joined the New Hampshire Medical Society in 1891 and was a member of the Rhode Island Medical Society. In the late afternoon of February 6th, after a long day's work, while calling on a patient he was bitten on the back of the leg above his shoe, blood poisoning developed from the wound. He was attended by Dr. Rufus Darrah of Newport, R. I., and had Dr. Blake of Boston in consultation, but they could do nothing to save his life, and after intense suffering he died as he had lived, bravely without complaint, a man of strong personality and great mental activity. He is survived by a wife and mother.

Dr. Steele had endeared himself to the community in which he practiced, and his premature death aroused a pronounced sentiment of grief, a very large representation of his friends manifesting their sense of loss at the funeral. Aside from his professional activity and personal characteristics, he had several hobbies. He was a collector of curios, and had over sixteen hundred birds' eggs, no two of them alike, and he also had an enviable collection of old books and old china. Such traits indicated a man of personality, and his loss will be deeply felt.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Keen's Surgery Volume VI: The Volume with the Newest Surgery. By 81 eminent surgeons. Edited by W. W. KEEN, M. D., LL. D., Hon. F. R. C. S. (Eng. and Edin.), Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Octavo of 1177 pages, with 519 illustrations, 22 in colors. Philadelphia and London: W. B. Saunders Company, 1913. Entire work, consisting of six volumes, per volume: cloth, \$7 net; half morocco, \$8 net.

Originally it was planned that this system should comprise five volumes and these appeared between 1906 and 1909. Since the appearance of the last volume, there has been so much progress in many departments of surgery that the editor felt it wise to publish a sixth volume which would bring the subject matter of the system quite up to date. Accordingly the contributors to the other volumes have been requested to

prepare short chapters on the additions to the surgery of the chapters which they originally contributed. To this request nearly all the contributors have responded. In addition to these some new chapters have been added, on Anoxic Association, the methods of anaesthesia of Meltzer and Auer by intratracheal insufflation, the surgery of the hypophysis, the use of Salvarsan, the treatment of cancer by fulguration and desiccation and certain of the newer methods of anaesthesia by nitrous oxide and the intravenous introduction of ether. Especial attention has been paid to the advances in thoracic surgery and the operative procedure under positive and negative pressure have been carefully presented. This volume, in brief then, may be regarded as a careful digest of all important surgical progress since the various chapters in the preceding volumes were written. The volume contains 1177 pages of subject matter with 519 illustrations, 22 of them being in colors. The volume contains a most carefully prepared general index of the entire six volumes. This adds greatly to the value of the system as a whole. The general character of the subject matter of the volume can not be too highly commended and we feel that it makes of this system the most complete and satisfactory presentation of the general subject of surgery in the English language. It is to be hoped that other volumes will be added to the system as surgery progresses and new subject matter becomes available.

A. W. E.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume II. Number I. (February 1913). Octavo of 179 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Published bi-monthly. Price per year: Paper, \$8; cloth, \$12.

This number continues the very excellent presentation of illustrative surgical cases and their treatment inaugurated more than a year ago when the first number of these "surgical clinics" appeared. Of especial interest in this number is a brief paper on the operative treatment of fractures by Mr. Lane and a paper on the Medicolegal Relations of Physician and Patient by Dr. Woodward of Washington, D. C. Most of the other important subjects presented pertain to the surgery of bones and joints together with some very characteristic and instructive abdominal cases. This number is especially well illustrated and in every way reaches the high standard of excellence already attained by the previous issues.

A. W. E.

Making Good on Private Duty. Practical Hints to Graduate Nurses. By HARRIET CAMP LOUNSBERRY, R. N., President West Virginia State Nurses' Association, Sanitary School Inspector for Charleston Independent School District. Philadelphia and London, J. B. Lippincott Company. Price \$1.

This small book of 208 pages should be helpful to nurses particularly in the early part of their work with private patients. It contains much useful and practical information which may not be learned in the

training school course. Excellent advice is given concerning the relation of the nurse to the patient, to the doctor, about the care of her own health, her dress and conduct, her relation to the patient's family, friends and servants and her function as a teacher.

This book answers many perplexing questions which may arise in the nurse's mind and should also be a source of encouragement.

T. O.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M. D., Philadelphia, Pa. J. B. Lippincott Company, Philadelphia and London. Volume II. Twenty-second Series 1912. (The price of this book is \$2.)

This volume contains an unusually large number of valuable articles for instructive reading and future reference the emphasis being upon the subject of anaesthesia, there being no less than twelve papers comprising the symposium and touching all sides of the question, also illustrations of apparatus used by Drs. Roth-Drager and Flagg.

Nutrition comes in for a fair share of attention, both adult and infant. The article entitled "Food—What it is and What it Should Be," by W. O. Owen, of Washington, D. C., is rather unusual and would prove a good text for a discourse to the public. "The Dangers of Under-feeding Infants" by R. D. Rudolf, M. D., Edin., and "Can We Prevent the Bottle-fed Baby?" by Saml. A. Visanska, M. D., are profitable papers.

Perhaps the most timely contribution is from the pen of J. W. Ballantyne, Edinburgh, Scotland, on "The National Insurance Act (1911) for the United Kingdom." Every physician in the United States should be posted on this subject and keep in touch with its working. It is revolutionary in its scope as touching the financial side of the practice of medicine in Great Britain and Ireland and in these days of social and industrial unrest in America where the legislature is looked to for reforms (?) in so many instances, it would not be surprising should a similar measure be advocated for our commonwealth.

H. D. C.

LARYNOLOGY, RHINOLOGY AND OTOLOGY

Edited by Clement F. Theisen, M. D.

Primary Tuberculosis of the Mucous Membrane of the Mouth and Lower Jaw after the Extraction of a Tooth. (Primäre Tuberkulose der Mundschleimhaut und des Unterkiefers Nach Zahnektaktion.)
EHRHARDT. *Deutsche medicinische Wochenschrift*, No. 3, 1911.

The localization of tuberculosis in the mucous membrane of the mouth belongs to the rare lesions of the disease. Even in the last stages of tuberculosis of the lungs, when the patient's resistance is very much

lowered and large numbers of bacilli are passing through the mouth, tuberculous processes in the mucous membrane of the mouth are not very common. This offers a strong contrast to the mucous membrane of the trachea, the larynx and the tonsils, which are involved in about half the cases of pulmonary tuberculosis. As a cause for the rarity of tuberculosis in the mucous membrane of the mouth, the same questions as for the occurrence of infectious processes in the mouth in general arise. In the first place the secretion of saliva. The saliva has a mechanical action in washing away bacteria if they have not penetrated too deeply into an abrasion of the mucous membrane.

It does not appear to have any bactericidal properties.

The large number of leucocytes which go through the mucous membrane with the rich blood supply and the enormous numbers of saprophytes in the mouth are other protections.

Primary tuberculosis of the mucous membrane of the mouth, etiologically, can only develop after infection by tubercle bacilli through a wounded surface in the mucous membrane.

As carriers of infection, food, the fingers and foreign bodies, particularly instruments, are to be considered. Of the instruments the tooth forceps, a fact that Zaudy has before brought out, takes first rank. There are a number of cases on record (and one has been observed by the author), in which the tooth forceps caused a syphilitic infection and it is quite possible that tubercle bacilli may be carried into the wound after the extraction of a tooth, in the same way.

The writer reports the case of a girl nine years old, of healthy family, who had always been well herself. She had never had enlarged glands nor any lung symptoms. Three months before coming under the author's observation, a molar tooth had been extracted by a dentist. The wound did not heal and the family physician was called, who prescribed antiseptic mouth washes. In spite of all local treatment a thickening of the alveolar process and a large gland in the sub-maxillary region with several smaller ones on the same side, developed. The child's mother stated that the dentist had not sterilized his instruments before removing the tooth.

On examination, for about 2 cm. on both sides of the alveolar process, a number of yellowish nodules could be seen. The alveolar process was about double its usual thickness. A diagnosis of primary tuberculosis with involvement of the regional lymph glands, was made. Patient was given an anaesthetic and the enlarged glands together with the diseased alveolar process, were removed. The patient made a good recovery and after a year, an examination showed perfectly normal conditions.

The author is of the opinion that the infection in this case was undoubtedly conveyed by the tooth forceps during the extraction of the tooth. In the normal rapidly healing tooth cavity it is not very probable that infected milk could have produced an infection with such extensive bone changes as this.

In conclusion, the author urges the careful disinfection of all dental instruments. It is well known, that particularly fakers in this line of work, are the chief sinners in this respect.

*A Symptom of Mastoiditis.*HENRY A. ALDERTON. *Laryngoscope, December, 1911.*

The average case of mastoiditis offers very little difficulty in the way of diagnosis; the indications being so evident that the merest tyro in otology recognizes the condition.

Beyond this region of certainty there is a middle field which is misty to the beginner or to the general practitioner but which to the trained otologist is familiar ground. Some one symptom or group of symptoms, more or less obscure in themselves, indicate with considerable certainty the nature of the trouble and the necessity for intervention.

There are a certain number of cases which puzzle even the most expert otologist. These cases may have only a slight discharge, which, however, keeps up unduly long considering the apparently moderate involvement of the middle-ear structures; or the drum-membrane may heal without returning quite to its usual normal appearance, the hearing remaining poor; there may be no evidence of a febrile movement nor any complaint of aching nor pain around the mastoid or in the depths of the ear, except at certain periods for a short time, especially at night; or there may be no tenderness on pressure or no confession of tenderness; no bulging of the drum-membrane nor of the posterior-superior wall of the external auditory canal near the membrane. Sometimes there is complaint only of a dull ache over the affected side of the head. In these cases the throbbing tinnitus may and often is present but is not much emphasized, questioning at times being necessary to elicit the presence of the symptom. The general health may not seem to be affected. Frequently, however, after consent has been given to operation, the patients will confess to a subconscious knowledge that something was wrong. And, occasionally it is only on the appearance of external swelling that the otologist wakes up to the fact that the disease process has been steadily advancing during all this quiescent period.

Now it is just in these cases of doubtful diagnosis, though present as well as a rule in the other more evident cases, that the symptom to which the writer would like to draw attention is often present and of great value as corroborative evidence.

This symptom consists in a blurring of the outline of the mastoid tip as contrasted with that of the healthy side. The edges of the tip of the affected mastoid process are not so well defined as they are on the opposite side, or when both sides are involved, as they should be normally. This blurring of outline is quite distinct from any localized swelling such as precedes a perforation of the mastoid cortex in the formation of a sub-periosteal abscess or a case of Bezold's mastoiditis. It may be the precursor of either of these conditions or it may occur when there is very little chance of either occurring.

The symptom is elicited by grasping the tip, anteriorly and posteriorly, between the fingers of one hand while exercising a control with the other hand on the healthy tip of the other side; the difference in definiteness

of outline is then easily appreciable. The writer has had house surgeons and assistants, not knowing which was the involved ear, make out the affected side by this method alone. And in a large number of cases of acute mastoiditis, the presence of this symptom in conjunction with the existence of an acute middle-ear suppuration has determined operation, though the patient was apparently progressing as favorably as usual; and in every case the operative findings have confirmed the value of the symptom as an important indication for operation. It goes without saying that a negative finding has not the importance attached to the positive. The symptom is more difficult to elicit in fat or in very muscular people than in the thin and flabby. Of course, where both sides are affected, the element of experience and tactile sensibility on the part of the observer comes especially into play and in these cases one may be misled more easily than in unilateral cases; while the swelling from otitis externa sometimes leads to doubt, this latter is almost always reduced in a few days by local treatment and the use of the ice-bag, upon which event the presence of the above-mentioned symptom becomes manifest if an acute mastoiditis exists.

The blurring of the outline is due to a mild inflammatory infiltration of the periosteum of the mastoid tip and of the adjacent soft structures brought about by their juxtaposition to the underlying inflamed bone. The soft parts over the mastoid are more boggy than those over the unaffected side; this bogginess is at times sufficient to render the posterior auricular fold slightly less well defined on the affected side.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Thiocol: A Clinical Study.

HORACE G. COLE. *The Practitioner*, November, 1911.

The author has used this in a large number of cases of pulmonary tuberculosis and his experience leads him to believe that it possesses all the good properties of creosote with but few of the evil ones.

During its administration a healing process takes place in the lung tissue with a diminution in the frequency and intensity of the cough, the length of the paroxysm and a loosening and lessening of the expectoration, but no more so than creosote. Its most marked effect is the rapid disappearance of the night-sweats, and the quick decrease in the evening rise of temperature, points in which it is far superior to the drug from which it is derived. It is practically odorless and tasteless, is constant in its composition and produces neither dyspepsia, pain in the stomach, vomiting nor eructations and it is non-toxic, but it produces the same type of skin eruptions as creosote.

The psychological effect, however, is exactly the reverse of that occasioned by creosote. Patients are cheerful and happy, and there is a general feeling of *bien être*, especially well marked in the case of children.

Thiocol may be administered in tablets or in mixture. The former disintegrate well in the stomach, and are the more convenient method of administration. It may, however, be given with syrup of orange or of lemon, a useful method in the case of children. It has no incompatibles so may be readily combined with other drugs, such as bitters, tonics, aperients and cod-liver oil.

The drawbacks to its use are that it occasionally causes a transient diarrhoea, an unimportant skin rash, but most serious of all it is very expensive.

SURGICAL PATHOLOGY

Edited by George E. Beilby, M. D.

Acute Cholecystitis with Large Amounts of Calcium Soap in the Gall-bladder.

JOHN W. CHURCHMAN. *The Bulletin of the Johns Hopkins Hospital*, Vol. 22, page 223, July, 1911.

In view of the great frequency with which the gall-bladder is drained in conditions identical with those present in the patient whose case Churchman reports, the absence of any similar case in the clinical literature emphasizes the uniqueness of the observations which are here recorded. Although soaps are found in small amounts in the bile, the author states that he has been able to find no records in the chemical literature on the subject of a gall-bladder contents composed almost entirely of soap. The clinical features of his case were typical of an acute cholecystitis. The patient had never had typhoid fever. At the operation straw colored fluid was found in the peritoneal cavity, cultures from which remain sterile. The gall-bladder was distended and much inflamed and on aspirating the organ instead of containing pus a fluid, unlike anything that the author had previously seen in the gall-bladder, appeared in the barrel of the syringe. The color of the material suggested a mixture of cod liver oil and turpentine and resembled the contents of a mesenteric cyst which he had observed. On opening the gall-bladder a number of bile stained stones were found and removed. There was neither bile or pus in the gall-bladder. The chemical analysis of the material from the gall-bladder showed it to consist largely of soaps of the calcium salts. Some free fatty acids were also present but no bile pigments. Churchman states that the analyses of other investigators, although the figures have shown some differences, agree as to the substances found and in a way as to their relative proportion. All observers have found a small amount of fatty bodies (fatty acids, soaps, fats and lecithin) but none have found them in such preponderance as was the case in this patient.

ALBANY MEDICAL ANNALS

Original Communications

PERNICIOUS ENDOCARDITIS.

A REPORT OF SIX CASES, WITH FOUR AUTOPSIES.

Read before the Medical Society of the County of Ulster, March, 1913.

BY HERMON C. GORDINIER, M. D.,

Troy, N. Y.

Gentlemen of the Ulster County Medical Society:

At the outset of this paper I wish to express my thanks for, and appreciation of, your courtesy in requesting a communication at my hands. Feeling that something of general interest to the majority of practitioners of medicine would be most acceptable, I have concluded to take as my subject pernicious endocarditis, reporting six cases, with four autopsies. Four of these cases have occurred in my service at the Samaritan Hospital, Troy, during the past few years.

Various names have been given to this form of endocarditis to distinguish it from the simple or benign, such as septic, infective, ulcerative, diphtheritic or malignant; the subacute and chronic types, because of their long duration are now often called endocarditis maligna lenta.

Professor Osler objects to the term "ulcerative" because, on the one hand, there may be no ulceration of the valves in cases which present the characteristic features of the disease during life, and, on the other hand, endocardial losses may occur without these symptoms. The term "malignant," given to this form of endocarditis by Virchow, seems equally objectionable because a number of cases are recorded in the literature with recovery which correspond clinically in every particular to the various types of this disease, cases from whose blood specific forms of bacteria were grown in pure culture, and, on the other hand,

because we naturally associate with the term "malignant" an absolutely fatal disease, using the term much as we do to indicate the malignancy of carcinomatosis. The term "pernicious," given to this form of endocarditis by Broadbent seems to me very appropriate, as it gives a certain amount of latitude and indicates the seriousness of the condition without necessarily connoting a fatal issue.

Gibson, in his great work, makes no attempt to separate the so-called simple or benign endocarditis from the non-fatal or the malignant types. He says, "By the classification which is most in vogue, the disease is subdivided into an acute, including malignant and benign varieties, and a chronic form. Such an arrangement on examination breaks down in many ways. All acute forms of endocarditis, and they are many, if not due to, are attended by the presence of microorganisms; the same microorganisms being present in those forms commonly regarded as malignant or infectious and those which are not. The lesions which are found after death are frequently identical in cases which would be considered clinically as belonging to different classes. The diagnosis of cases which are to be regarded as infectious can only be determined by the employment of bacteriological tests." Doubtless most of us are in accord with the above statement of Gibson, especially as all of us have seen at the autopsy table old cicatricial and deforming lesions of the aortic or mitral valves, especially the so-called button-hole mitral valve in stenosis of that orifice, in patients who have carried these defects numbers of years, finally succumbing to their effects. The very nature of these pathologic changes is suggestive of ulcerations and these cases form a link in the chain between very mild and fatal cases of acute endocarditis.

In 1903, Poynton and Payne showed that a malignant endocarditis may be set up by a diplococcus, indistinguishable from that which they isolated in rheumatic fever. They cultivated from the valves of a series of cases of pernicious endocarditis a diplococcus, cultures of which, when injected into rabbits, produced the disease in those animals. This diplococcus they considered to be identical with that which they had previously isolated in cases of pericarditis and endocarditis associated with rheumatic fever.

In the cases they report, a history of rheumatic fever occurring previous to the attack of endocarditis was elicited. Their researches seem conclusively to prove that the same organism which produces the so-called simple rheumatic endocarditis, may, if its virulence be great, or the vital resistance of the individual be at a low ebb, excite an endocarditis of a pernicious type. They believe that all cases of endocarditis are infectious, the benign being that type in which the infection becomes arrested and the pernicious the form in which it continues active and rapidly progresses to a fatal issue.

It is interesting in this connection to note that even before the observations of Poynton and Payne, Fritz Meyer cultivated from the tonsils of individuals suffering with tonsillitis a very fine diplococcus which, when injected into the circulation of dogs, produced in these animals a polyarthritis resembling in every particular rheumatism in man. In many of these animals pleurisy and pericarditis followed and typical endocarditis was developed in one-fifth of the cases, twenty out of one hundred dogs operated upon.

These observations of Fritz Meyer and of Poynton and Payne are very interesting because we now regard rheumatic fever as an infection whose portal of entry in a large number if not all of the cases is the tonsils. Many of us have seen over and over again cases of rheumatic fever with serious cardiac complications occurring during or directly following an attack of tonsillitis. So frequently does this happen that it has been my practice to prescribe anti-rheumatic remedies to every case of tonsillitis with the hope of averting rheumatism and its serious cardiac complications, and also to advise a painstaking removal by careful dissection of all tonsillar tissue in those predisposed to tonsillar infections.

While Guerich advocates the removal of tonsils at any stage of an active rheumatism, and though one may consider this a too radical rule of action, one must admit their extirpation wherever found diseased, is indicated in all persons who show the slightest rheumatic tendency, or who have passed through an attack of the disease. Bearing in mind the early or primary involvement of these structures in diphtheria, influenza, scarlatina, and other acute infections in which endocarditis and

myocarditis frequently occur, it would seem that we are justified in placing tonsils in the same category with adenoids and suppurating accessory sinuses in relation to removal of these infections. With the careful studies of the tonsillar flora by Rosenau, and those of Poynton and Payne on the flora of the periarticular tissue in rheumatism, we may hope to obtain information of great value in relation to the various strains of streptococcus attacking the heart. Even now we are fully justified in believing that early attention to the tonsillar field alone, will serve to diminish greatly the incidence of heart disease in both children and adults.

Netter has produced ulcerative endocarditis in rabbits after injury to a valve by the inoculation of pneumococci. Michaelis has also produced this form of endocarditis in dogs by repeated inoculations of cultures of pneumococcus at frequent intervals. He has also produced endocarditis tuberculosa by injecting tubercle bacilli into the blood stream.

Professor Osler found endocarditis in fifteen per cent of his cases of pneumonia that came to autopsy.

That pernicious endocarditis may be the result of gonococcal infection is evidenced by the careful studies of His, Leyden, Michaelis, Councilman, Thayer and Blumer, Harris and Johnson and many others. Harder recently described a case of malignant endocarditis from which he isolated the gonococcus from the blood during life and from the affected valve post mortem. According to Michaelis, endocarditis is a very frequent complication of gonococcal infections, placing it next to rheumatic fever.

Although endocarditis is quite commonly due in man to the presence of streptococcus pyogenes, it has rarely been reproduced by transference through inoculations of these organisms into lower animals. Cole, however, in 1904, succeeded in doing so with cultures derived from puerperal fever and peritonitis.

A few cases of ulcerative endocarditis have been recently reported due to the presence of the influenza bacillus. Austin and Harden and Libman have published cases in which they have discovered Pfeiffer's influenza bacillus in the vegetations on the diseased valves. The wonder is that with a disease so extremely common, whose nature is so protean and whose complications so varied and grave, that it has not been more often observed

in this disease. It has rarely been observed in the course of diphtheria or typhoid fever. A few cases have been recorded where the typhoid bacillus has been found on the diseased valves, but not in pure culture, being associated with other organisms, mostly staphylococci and streptococci. Acute endocarditis of the aortic valve has been produced experimentally, however, by the injection of pure cultures of bacillus typhosus into the blood stream of some of the lower animals.

In 1903 Schottmuller described the streptococcus viridans, an organism which has since been found associated with a distinct clinical type of subacute or chronic endocarditis called "endocarditis lenta." It is highly probable that most cases of malignant endocarditis which have been engrafted on valves the seat of previous disease belong to this type.

Clinicians, taking advantage of the fact that the symptoms of pernicious endocarditis tend to associate into rather well-defined groups, have separated this form into the following types, namely, the septic or pyaemic, the typhoid, the cardiac, and the cerebral. It must be remembered, however, that while the separation of pernicious endocarditis into definite groups is very convenient, it is not uncommon to have cases presenting such a diversity of symptoms that they cannot be classified according to any definite type.

The septic or pyaemic type is, next to the cardiac, by far the most commonly met with. This is the type long ago described by Wilks as arterial pyaemia. It is particularly noticeable in the course of puerperal septicaemia or after open infected wounds, acute necroses, osteo-myelitic foci, etc., and it may occur in any of the forms of septicaemia or pyaemia. Its onset is acute, being ushered in by well-marked symptoms of sepsis. The temperature is characteristically septic and often very high. It usually presents definite exacerbations and remissions. Chills and severe sweats are common, and when the temperature begins to drop toward morning, the sweating is often excessive. The skin may show petechiae or pustules and sometimes patches of erythema multiforme. There may be septic emboli but they are not nearly as common as in the cardiac type. The heart may show nothing abnormal and even the presence of murmurs, may be of little moment because of their frequent association

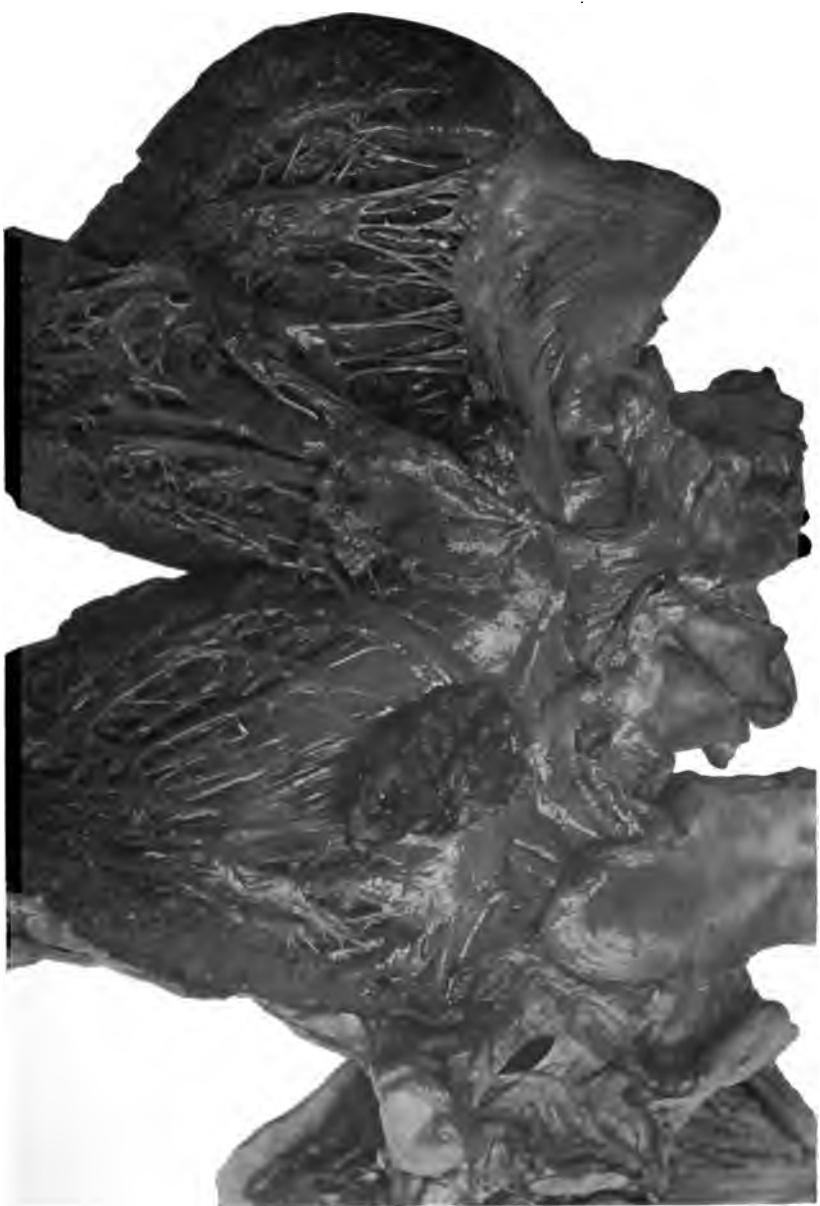
with septicaemia or pyaemia. If murmurs are present, that which is most significant is their great loudness and the changeability from time to time in their intensity, pitch and quality.

The typhoid type resembles so closely typhoid fever that many clinicians have erred in the diagnosis. There is in this type, be it noted, an absence of a detectable portal of infection. In 1889 the first case of pernicious endocarditis which it was my good fortune to observe, and then only on the autopsy table, was diagnosed by no less an observer than Professor Pschribam of Prague, as a case of typhoid fever. The autopsy showed vegetative endocarditis with infarcts in the lungs and spleen, haemorrhages on the surface of the brain, pyaemic abscesses in the liver and suppurative nephritis. The intestines were normal. The pathologist, Professor Chiari, stated that he had observed many such cases before, diagnosed as typhoid fever. Two of the cases herein reported were so diagnosed. The appearance of the patient, the facies, the dry brown tongue, the diarrhoea, the delirium and the enlarged spleen form a group of symptoms closely resembling those of typhoid fever. On the other hand, the presence of recurring chills, profuse sweats, petechiae and emboli, together with the presence of cardiac murmurs whose quality and pitch are changeable from time to time, form a group rarely if ever observed in typhoid fever.

The cerebral type of the disease is quite uncommon and occurs when the endocarditis is associated with meningitis. Hence you may have Kernig's sign, rigidity of the neck and a cerebro-spinal fluid of high tension, cloudy, rich in albumen and micro-organisms. I have never observed such a case. According to Dreschfeld, quoted in Albut's System, the affection begins with headache and somnolence and cutaneous hyperesthesia gradually passing on to unconsciousness and coma, or delirium and convulsions may be the prominent symptoms. The heart symptoms are in the background or may be altogether absent, but chills are frequent and emboli not rare, so that sudden hemiplegia with or without aphasia may also occur.

The cardiac type first described by Bramwell, also sometimes termed the malarial type, is by far the most common form of pernicious endocarditis. It occurs in individuals whose hearts have already been damaged by previous disease. It runs a sub-

To Illustrate Dr. Gordinier's Article on "Pernicious Endocarditis"
Albany Medical Annals, June, 1913



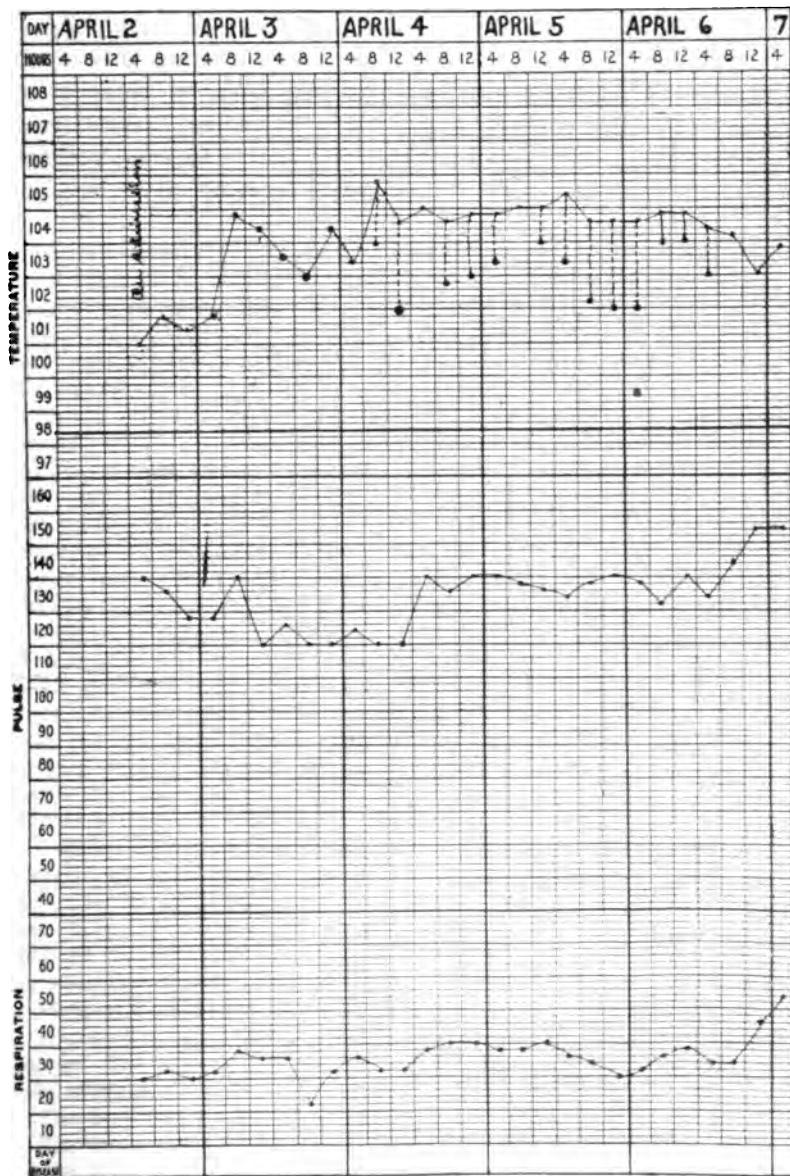
Heart from Autopsy of Case III of series, showing large fleshy vegetations on leaflets of aortic and mitral valves.

acute or chronic course, the febrile reaction and associated symptoms sometimes persisting for more than a year. In two of my cases the symptoms lasted over nine months and in one about seven months. This form usually comes on in a very insidious manner. A slight rise in temperature, a chilly feeling, rheumatic pains, or sweats followed by a temperature of an intermittent or septic type which soon becomes continuous and may last for weeks before the symptoms positive of the serious changes going on in the heart are made manifest. These are mostly embolic in character. Multiple emboli of the skin, serous, and mucous surfaces, producing the petechiae; embolic plugging of the vessels of the lungs, giving rise to sudden stabbing pain in the side, dyspnoea and bloody sputum. Infarctions of the kidneys are frequent and are usually indicated by sudden severe pain in the loin and haematuria. Plugging of the vessels of the spleen is not at all rare and it occasions very acute pain and swelling of the organ and friction which may be often felt and heard over it, splenic abscess not infrequently following. Emboli are quite frequently lodged in the vessels of the brain, producing all sorts of symptoms, such as rapidly developing dementia, monoplegia, hemiplegia, aphasia, hemianopsia, delirium, convulsions and coma, depending upon the particular vessel plugged and the territory which it supplies. Sudden blindness of an eye is not at all uncommon from embolism of the central artery of the retina. This happened in two of the cases herein reported. Embolism of the mesenteric artery is a rare and very serious complication, producing sudden symptoms of intussusception and collapse. Embolism of the peripheral arteries always results in gangrene of a part or the whole of one or both extremities, depending upon the level of the lodgment of the embolus. In one case of mine which did not come to autopsy, sudden embolic plugging of both popliteals occurred, producing great pain, shock, sudden collapse and death in a few days. In addition to the petechiae and emboli, Osler has drawn the profession's attention to a diagnostic skin phenomenon which has taken the name of "Osler's Sign of Subacute or Chronic Endocarditis." This sign is of quite common occurrence and thus far has not been observed in any other condition. It consists of the appearance in the skin and subcutaneous tissues of multiple,

painful, circumscribed erythematous swellings. They occur in successive crops which last but a few days and vary in size from a split pea to that of a bean. They are probably due to localized inflammatory reactions about capillaries or arterioles plugged with infective emboli from the vegetations of the heart. In regard to the heart, the occurrence of new endocardial murmurs engrafted on those already existing such as a loud mitral systolic, or presystolic or diastolic murmurs heard best over the aortic or pulmonic interspaces and the changeability of the pitch and quality of those which already exist, form the most characteristic features.

Diagnosis. Perhaps no disease presents at times more difficulty in its diagnosis or is more often overlooked than pernicious endocarditis and this despite our advanced clinical and bacteriological methods. Those of us who have fallen in its diagnosis can bear witness to this fact as well as to the surprises and feelings of chagrin that we have experienced as a result of the revelations of the post-mortem room. If we will ever bear in mind the characteristics presented by various types of this disease, we will rarely err in our diagnosis. The most precise method of diagnosis is the bacteriological, i. e., by making blood cultures, micro-organisms being present in the blood stream in about ninety per cent of the cases. Of course, when this method gives positive results, it means much, but when negative, it means little. Hence, in some cases, we are naturally forced to rely for our diagnosis on clinical symptoms and physical signs. A temperature of a septic type with or without recurring chills and severe sweats, especially if the fever be unaffected by quinine, the presence of petechiae of the skin and mucous surfaces, or emboli of spleen, lungs, kidneys, brain, peripheral vessels, etc., together with the presence of endocardial murmurs whose quality changes from time to time, or the presence of new endocardial murmurs especially if diastolic in point of time, form a group of symptoms which are almost positively diagnostic. Frequent blood examinations will be sufficient to exclude the various types of malaria and assist materially in excluding typhoid fever. The blood picture of this disease is one of a very severe secondary anaemia with a moderate or great polymorpho-nuclear leucocytosis, the latter varying between 20,000 and 60,000.

Case 1 of Series
SAMARITAN HOSPITAL
Pulse, Respiration, and Temperature Chart
ACUTE MALIGNANT ENDOCARDITIS OF THE CARDIAC TYPE



The absence after several trials of a positive Widal reaction for either typhoid or the para-typhoid group and the presence of a polymorpho-nuclear leucocytosis of moderate or high grade, coupled with the above-mentioned symptoms, are the chief distinguishing points between pernicious endocarditis, typhoid or paratyphoid infection and acute miliary tuberculosis. In the latter disease, moreover, it is often possible to demonstrate the primary focus of disease either in the lungs, joints, lymph nodes or some of the internal organs.

CASE I.—Acute Pernicious Endocarditis of the Aortic Valve with Infarctions of the kidneys, spleen, and vessels of the right eye, panophthalmitis and general septicaemia, diagnosed as typhoid fever.

Male, R. M., aged 24 years. Occupation, packer. Entered the Samaritan Hospital April 2, 1900, complaining of pain in the head and right eye, dimness of vision and diarrhoea.

Family History.—Father died at 45 years of age, cause of death unknown. Mother is living and enjoying excellent health. One brother died at 10 years of age of diabetes mellitus. An aunt died of cancer of the breast. Otherwise the family history is unimportant.

Personal History.—He has had all the diseases of childhood. Denies venereal infection. Drinks moderately but uses no tobacco. Was in perfect health until the autumn of 1898, when he went South with the Second New York Volunteers and shortly after arriving at Tampa he developed a fever which was diagnosed as typhoid. He was removed to Thomasville, Ga., where he entered a hospital and remained ten weeks. Since then he has been subject to headaches of variable intensity. In June, 1899, he resumed his occupation, which he continued until March, 1900. A few days before entering the Samaritan Hospital he complained of pain in the right eye. Thinking perhaps it was due to some extraneous dirt, he consulted a physician who could find nothing abnormal. Within a few days the vision of the right eye grew very dim.

General Observations.—He is a well-built man with some general emaciation, no edema, no cyanosis, but very pale and sallow. The tongue protrudes in the mid line, is fissured, bleeds easily and is covered with a dark brown fur. The cranial nerves are intact. The right eye is injected and the cornea is very cloudy, while a small amount of pus exists in the anterior chamber.

Physical examination of the lungs is negative.

Heart.—The apex beat is in the fifth intercostal space within the nipple. The heart sounds are feeble and at the apex there is a soft systolic murmur.

The liver shows nothing abnormal.

The spleen is percussible and palpable.

The urine is normal. No blood examination is recorded.

The abdomen is universally tympanitic but not tender.

Many elevated papules were found distributed over the chest and abdomen, "petechiae mistaken for rose spots." There is no urethral discharge.

Apart from a mild degree of delirium his mind is clear.

The patient remained in the hospital but a few days when he died rather suddenly. The autopsy protocol gives the following report: Acute vegetative endocarditis of the aortic valve; infarcts of the spleen, kidneys and vessels of the right eye; panophthalmitis; broncho-pneumonia; passive congestion of the liver and kidneys; acute splenic tumor; septicaemia with hemorrhages into the skin, bladder, pleura and intestines.

The diagnosis of this case was that of typhoid fever. How such a diagnosis could have been made in view of the sudden loss of vision, together with the presence of pus in the anterior chamber of the eye and petechiae, I cannot imagine. An examination of the blood, which might have aided in clearing up the case, was not attempted.

CASE II.—Acute Pernicious Endocarditis of the cardiac type with hemorrhagic pleurisy and petechiae, due to vegetative endocarditis of the aortic and pulmonic valves, ulcerative in form.

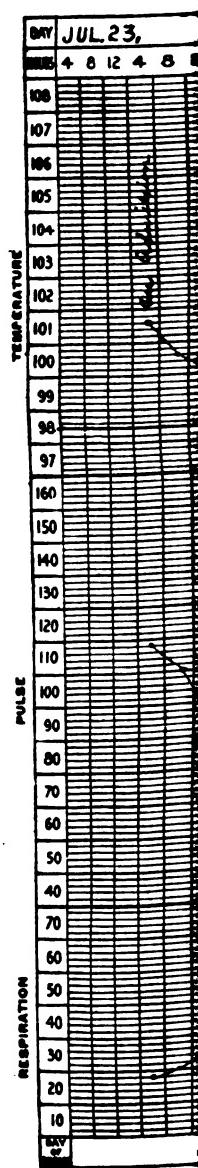
Mr. H., aged 40, married, brush-maker by occupation. Entered the Samaritan Hospital July 23, 1901, complaining of shortness of breath, great general weakness, swelling of the abdomen and cough.

The Family History was unimportant.

Personal History.—Apart from the ordinary diseases of childhood his health has always been good to the beginning of the present illness. He has used tobacco and alcoholics immoderately. Denies venereal diseases. Present illness began four months ago with swelling of the abdomen and jaundice. One month ago he developed an irritable cough without expectoration and his breathing became labored. His relatives state that he has had during the past few months several attacks of loss of consciousness not preceded by convulsive seizures. He is at times incoherent and delirious.

General Observations.—He is a well-built man with firm musculature. The respirations are rapid, the mucous surfaces very pale, the tongue coated with a thick brownish fur and the gums are covered with sores. His cranial nerves are intact. His facial expression is that of a very sick man. He is quite delirious, but recognizes his attendants and friends. He complains of no pain. He has no chills or critical sweats. There is no edema. The abdomen is much distended and shows some purpuric spots, as do also his chest and back. His pulse is small, rapid, equal and apparently of low tension.

Heart and Arteries.—The cardiac dullness begins at the fourth rib and extends from the mid-sternal line to the left mamillary line. The apex beat is seen and felt in the fifth interspace. At the junction of the fourth rib with the sternum there is a rough systolic murmur which is quite well heard at the apex. The murmur seems localized and is not transmitted.



The pulmonic sound is not especially accentuated. The aortic sound appears normal. There is no friction, fremitus or thrill.

Liver.—The liver dullness coincides with the flatness of the right chest above; below, it extends to the costal margin. It is easily palpable.

Lungs.—On the right side, distinct flatness begins at the fourth rib in the mamillary line, at the third rib in the mid-axillary line and at the angle of the scapula posteriorly. Over the flat area both anteriorly and posteriorly the vocal fremitus and resonance are absent, as is the vesicular murmur. Above the areas of flatness harsh respirations and increased fremitus and vocal resonance exist.

The urinary examination was negative.

Examination of the nervous system revealed nothing abnormal save the delirium described above.

On July 26, 1901, on listening to the heart, I discovered a very soft diastolic murmur with its point of greatest intensity in the aortic interspace and conducted faintly down the sternum but not heard at the apex.

The pulse was rapid and feeble and not collapsing in character. The aortic second sound could be well heard.

We explored the right pleural space and withdrew about one pint of very bloody fluid. A Widal reaction was negative. No blood examination was made.

July 29, 1901, the diastolic murmur is much more plainly heard and is somewhat musical in quality. It is well heard over the pulmonic interspace and is conducted down the sternum to the xiphoid but is not heard at the apex. His temperature is not at all high. The petechial spots are more abundant and he is very delirious.

The presence of purpuric spots occurring in crops, the irregular, atypical temperature chart, the hemorrhagic pleurisy, the delirium and, most of all, the development of a diastolic, basic murmur under my direct observation whose quality changed within a few days from one of great softness to one more loud and musical in character, led me to diagnose pernicious endocarditis of the aortic valve. No evidence of emboli other than those of the capillaries of the skin occurred. He died quite suddenly August 2, 1901.

The autopsy resulted in the following anatomic diagnosis. Acute vegetative endocarditis of the aortic and pulmonic valves, with perforations of the aortic valve and ulceration through the interventricular septum and secondary involvement of the pulmonic valve; acute splenic tumor; right sided hemorrhagic pleurisy; infarctions of the lungs; multiple emboli of the skin, pleurae and intestines.

CASE III.—Pernicious endocarditis of the chronic type involving the aortic and mitral valves and endocardium of the left ventricle. The temperature lasting about ten months with late embolic plugging of the arteria centralis retinae of the left eye and embolism of the left middle cerebral artery. Due to infection with *Streptococcus pyogenes*.

Mr. B.; white; aged 29 years; salesman by occupation; entered the

Samaritan Hospital December 26, 1903, complaining of great weakness, loss of appetite, fever and cough.

Family History is unimportant.

Personal History.—He had rheumatic fever nine years ago which was complicated by endocarditis of the aortic valve, resulting in the valve becoming permanently crippled. He has had several attacks of gonorrhoea but denies syphilis. In September and October of the present year he was ill in the Post-Graduate Hospital of New York City with what was diagnosed as typhoid fever. He states that since then he has never been quite free from fever and has continued to remain very weak and feeble. He is without appetite and is unable to work.

Examination.—The patient is very pale, somewhat breathless, presents some general emaciation. The musculature is very flabby. There is no edema or cyanosis. The skin is hot and dry. The pulse rapid, regular, equal and typically collapsing in character. There are no petechiae, no enlarged glands no scars, no urethral discharge.

The Lungs show moderate hypostatic congestion and edema, otherwise they present the physical evidences of moderate emphysema.

Heart and Arteries. The cardiac apex is in the sixth interspace well to the left of the mamillary line. The impulse is diffuse and no thrill or friction fremitus can be detected. The cardiac dullness begins at the fourth rib and extends from one centimeter to the right of the sternum to two centimeters to the left of the left mamillary line. At the aortic interspace a soft, long drawn out diastolic murmur is heard which is conducted down the sternum to the xiphoid cartilage and to the left as far as the apex, where it is well heard. There is a double tone in the carotids and femorals. The aortic element of the second sound is entirely replaced by the murmur. The first sound at the apex is prolonged but no murmur is discernible except the transmitted aortic murmur above referred to. The pulse is collapsing, the carotids pulsate forcibly and a well-defined capillary pulse is present. The arteries do not feel thickened.

The Spleen is neither percussible nor palpable.

The Liver dullness in the mamillary line begins at the fifth rib and extends to the free costal border. It is palpable but shows no special change and is not tender.

The Abdomen is tympanitic. It presents no dullness in either flank. No enlarged veins or tumor masses are detectable.

The urine examination was negative. The Widal reaction was also negative. The blood showed a moderate leucocytosis and no deformity of the reds or malarial parasites were found. The sputum contained no tubercle bacilli.

His mind is perfectly clear. The cranial nerves functionate normally. The superficial and deep reflexes are normal.

The results of the examination together with the history of a long-continued fever of a septic type with negative Widal reaction; the absence of malarial parasites in the blood and the negative sputum findings made me feel that we were probably dealing with one of those rare forms of per-

Detailed description: The figure consists of three vertically stacked line graphs, each representing a single day's temperature fluctuations. The top graph (Oct 5) starts at a high point, drops sharply, and then remains relatively flat. The middle graph (Oct 6) begins with a sharp peak around 10 AM, followed by a gradual decline. The bottom graph (Oct 7) shows a steady, gradual increase throughout the day.

Date	Time	Temperature (°F)
OCT. 5	8 A	68
	12	64
	4 P	68
	8 P	62
	12	60
	4	60
	8	60
	12	60
OCT. 6	8 A	68
	12	74
	4 P	72
	8 P	68
	12	66
	4	64
	8	62
	12	60
OCT. 7	8 A	68
	12	70
	4 P	72
	8 P	68
	12	66
	4	64
	8	62
	12	60

nicious endocarditis of chronic type so well described by Osler. I preferred, however, to defer making a diagnosis until I had opportunity for further observations. I should state in passing that a blood culture was asked for but objected to both by the patient and his family.

January 15, 1904. Considerable change has occurred in the patient's condition. He is weaker, has dreadful sweats preceded by slight rigors which come on later each afternoon. His temperature chart is characteristically septic in type. The diastolic aortic murmur has changed from soft to very rough and there has developed a direct, rough, aortic murmur which is conducted slightly into the vessels of the neck. Thus, on listening at the base, a perfectly distinct to-and-fro or see-saw murmur is detectable. There are no petechiae, no infarcts and the spleen is not palpable.

February 1, 1904. Very little change has taken place save that two days ago he was suddenly seized with a severe stabbing pain just beneath the angle of the left scapula which was increased on inspiration and accompanied by a cough but without bloody expectoration. Over this a few high-pitched, unchangeable, sub-crepitant rales were detected. I suspected that this might be the result of a pulmonary infarct. No change has occurred in the cardiac condition except that the systolic basic murmur is more in evidence. The septic character of the temperature chart continues as before.

March 1, 1904. The patient is much emaciated, looks very septic, has had no chills for more than two weeks, sweats very little. He complains of pain in all the large joints, but they are not red, swollen or tender on pressure. The double murmur at the base is very plain, the quality of each is still rough and a very soft systolic murmur is now heard at the apex transmitted slightly to the left. The temperature continues as before with the evening exacerbations and the morning remissions. His mind is perfectly clear. He takes but little nourishment. His breathing is short and the slightest exertion brings on dyspnoea. His pulse is not so typically collapsing in character and I was unable to obtain a capillary pulse.

April 1, 1904. Scarcely any change has occurred in the patient's condition during the past month save a general loss of flesh and strength and a continuation of the remittent or septic temperature. The murmurs have continued of the same quality but are weaker.

In May he returned to his home in Bennington and Dr. Chisholm, who attended him, informed me that several days after his arrival he was seized with sudden pain in the left eye and confusion of speech. The speech defect cleared in a few days. Examination of the fundus by Dr. Chisholm disclosed an embolism of the arteria centralis retinae.

Two weeks later he had plugging of the left middle cerebral artery and consequent right hemiplegia. He died August 18, 1904.

The anatomic diagnosis at autopsy was: subacute vegetative endocarditis of the aortic and mitral valves and of the left ventricle; subacute adhesive pericarditis; acute myocarditis with hypertrophy and dilatation of the heart; infection caused by *Streptococcus pyogenes*.

CASE IV.—Pernicious Endocarditis of the Aortic and Mitral Valves of the chronic type, which presented during life a septic temperature of about nine months' duration; recurring crops of purpura so abundant as to cover the entire trunk and extremities; endocardial murmurs whose characters changed under direct observation from rough to soft and from musical to vibratory. Without chills or severe sweats and without delirium until within twenty-four hours before death. Due to infection with *Streptococcus pyogenes* which was found in pure culture from the lungs, liver, heart's blood, vegetations and kidneys.

Mr. S., aged 43 years; shirt ironer by occupation; entered the Samaritan Hospital September 23, 1906, complaining of pain beneath the left shoulder blade which extended anteriorly to the cardiac region. He also complained of breathlessness and palpitation.

Family History.—He had all the diseases of childhood. Had typhoid fever ten years ago. Has had no venereal diseases. Eight months previous he had been in the Samaritan Hospital for eight weeks with the diagnosis of relapsing fever. The blood showed no spirillae and the temperature chart was of the septic type. He left without much improvement and, in fact, he is still very ill and states that since then he has never been free from fever, pain, palpitation or shortness of breath. I saw him in consultation with his physician September 20, 1906, and, from his previous history and from the results of the present examination, which I will relate briefly, I was led to the diagnosis of pernicious endocarditis of the chronic type.

He was a large-framed, well-built man and looked very ill. He was of a dark, sallow complexion, had marked dyspnoea, a rapid pulse, soft edema of the feet and legs and numerous crops of purpura simplex scattered over the trunk and limbs. The finger tips were blue and slightly clubbed.

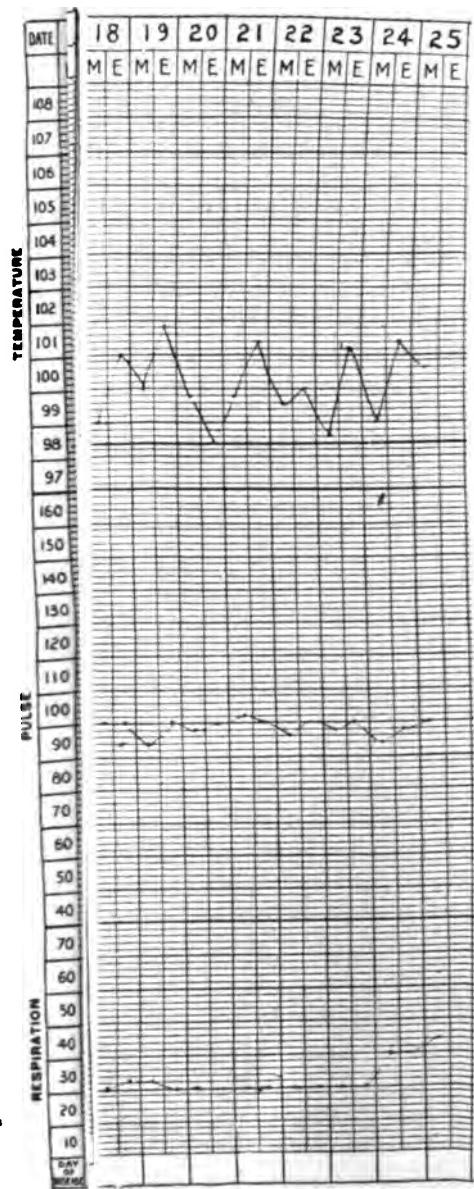
Lungs.—Apart from moist rales at the bases posteriorly, they were normal.

Heart and Arteries.—The cardiac apex is in the fifth interspace two centimeters outside of the mamillary line. There is a very distinct epigastric pulsation. No friction, fremitus or thrill exists. The cardiac dullness begins at the fourth rib and is continuous below with that of the left lobe of the liver. It extends from the mid-sternum 13 centimeters to the left. In the region of the apex a systolic murmur is heard, rough at its beginning but soft at its termination. It is conducted to the left as far as the axilla. The first sound at the apex is almost obliterated by it. At the base in the aortic interspace a soft systolic and long drawn out diastolic murmur are present. The latter was soft at its inception and terminated with a musical quality. It is conducted down the whole length of the sternum but not toward the apex. Systolic pulsations of the jugular veins are noted.

Liver.—Dullness extends from the fifth interspace above to the costal border. It is palpable on deep inspiration and is not tender. No friction can be felt or heard over it.

The Spleen is easily palpable. Its dullness begins above in the mid-axillary line at the eighth rib and extends downward and inward to 2 centimeters below the costal border. No friction is heard or felt over it.

Dec



September 26, 1906. The quality of the systolic murmur has changed, the roughness of it has disappeared, it is heard well in the angle of the scapula and is very soft in character. No special change is heard in the basic murmurs. A double tone in each femoral artery is present which is easily converted into a double murmur by stethoscopic pressure. Gaertner's tonometer shows the arterial pressure to be 100 millimeters of mercury. The temperature chart is assuming the septic type.

A blood examination shows the leucocyte count to be 12,000; reds 2,500,000; haemoglobin 50%. No malarial parasites were found and the Widal reaction was negative. Several attempts were made to make blood cultures, but the veins were so unusually empty that it was quite impossible to obtain enough blood.

The Urine.—The specific gravity is 1.015, its reaction neutral. It contains no sugar, a small amount of albumin, a few leucocytes, granular and hyaline casts, streptococci in large numbers but no gonococci or tubercle bacilli.

Examination of the nervous system is entirely negative. His mind is clear and no delirium is present.

September 27, 1906. The diastolic murmur at the base is much more definite; a capillary pulse is present in the lips, beneath the finger nails and in the vessels of the retinae.

September 30, 1906. The patient is exceedingly pale and very weak. The respirations are labored and hurried. The tongue is dry and the lips and teeth are covered with sordes. The gums are very vascular and bleed easily. Fresh crops of purpura have appeared and are disseminated over the trunk and extremities; in some situations they have coalesced, forming large hemorrhagic areas.

The systolic murmur at the apex is very soft, having lost its harsh quality. The diastolic murmur at the base has lost its musical quality and become vibratory. The systolic blood pressure taken with the tonometer in 80 mm. of mercury. The pulse is regular, rapid and collapsing in character.

October 4, 1906. For the past two days the patient has been very weak, apathetic and drowsy. He is not delirious. The purpura is almost universal. The whole body, with the exception of the face, is peppered with the eruption. The pulse is fast, losing its Corrigan character and becoming rapid and feeble. His blood pressure has dropped to 75 mm. of mercury. All the cardiac murmurs are more feeble and distant. The vibratory character of the diastolic murmur is less pronounced. A distant gallop rhythm is present. No evidence of emboli other than those of the skin is present. His muscles are extremely tender when handled. The blood count showed 18,000 whites, haemoglobin 60%, reds not counted.

October 8, 1906. He is quite delirious, the delirium being of the loud, muttering kind; he is incoherent in speech and his mind wanders. Many new crops of purpura are present. His respirations are rapid and he is cyanotic.

He died October 9, 1906: The autopsy was performed the same day by Dr. Carey, pathologist of the hospital, who kindly furnished me with the notes, which are as follows.

The body measures 150 cm. The pupils are equal. Post-mortem discoloration on the back. A petechial rash extends over the trunk and extremities and onto the neck, discrete in character except on the backs of the hands and feet, most numerous on the back.

Abdomen.—Considerable amounts of blood-tinged fluid in the cavity.

Intestines.—Just beneath the peritoneum a similar petechial rash is widespread. The small tags of fat attached to the intestines also show petechiae.

Heart.—In the fat of the pericardium petechiae are present and also in small tags of fibrin in the visceral pericardium. The heart is enlarged, both ventricles being hypertrophied. On the mitral valve are numerous vegetations distributed mostly over the upper surface and extending along the chordae tendinae to the papillary muscles. On the aortic valve are numerous vegetations considerably larger than those on the mitral valve, grayish green in color, measuring from one-half to one cm. in diameter and being attached frequently by a distinct pedicle. There is moderate atheroma of the aorta and coronary arteries.

Lungs.—The pleura shows a petechial rash similar in all respects to that on the pericardium. The lungs are otherwise normal.

Spleen.—Greatly enlarged, measures 21 x 15 x 6 cm., weighs 950 grams. It is soft in consistency. On the surface petechiae are likewise found. On section, the enlargement is found to be due almost entirely to increase in pulp.

Liver.—Aside from congestion it is normal.

Kidneys.—Slightly swollen, capsules strip easily, cortex swollen and contains many dilated vessels.

Intestines.—Save for a petechial rash, they are normal.

Pancreas, Gall-bladder, Adrenals and Lymphatics are normal.

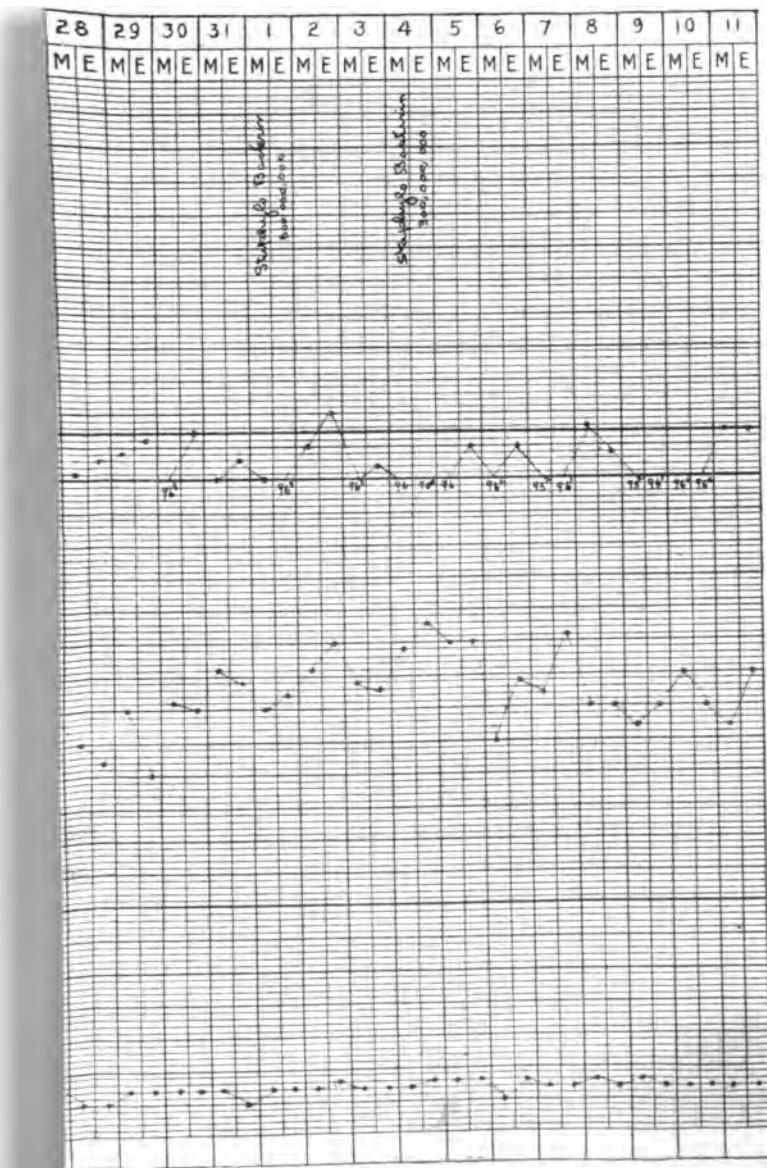
Cultures.—Those from the heart, lungs and vegetations show plenty of streptococci. Those from the spleen showed no growth. The streptococci in each case were in pure culture.

Diagnosis.—Malignant vegetative endocarditis of the aortic and mitral valves; acute splenic tumor; chronic passive congestion of the lungs and liver; dilatation and hypertrophy of the heart; chronic myocarditis; moderate atheroma of the aorta and coronary arteries; interstitial and glomerular nephritis; petechiae on the surface of most of the abdominal viscera; infection of the heart, lungs, liver, vegetations and kidneys with *Streptococcus pyogenes*.

CASE V.—Pernicious Endocarditis of the Cardiac Type cured by the use of an autogenous vaccine.

Mr. A. T., aged 29 years. Entered the Samaritan Hospital September 21, 1909, complaining of pain in the joints and across the front of the chest and shortness of breath. A year previous he had been treated at

November



the Hospital for rheumatic pains, when it was discerned that he had a mitral regurgitation.

Family History.—His father died at 53 years of age of locomotor ataxia. His mother is living and is in perfect health. He has one living sister who has had several attacks of articular rheumatism.

Personal History.—He has had varicella, lobar pneumonia at 7 years of age, and acute rheumatism at 10 years of age, since which latter time he has had several rheumatic attacks. Six weeks prior to his present admission to the hospital he had a severe rheumatic attack.

Examination.—He is a well-nourished man without cyanosis or edema. His mucous surfaces are pale and he looks very ill. His respirations are thirty per minute and quite labored.

Heart.—The cardiac apex is in the fifth interspace just outside the left mamillary line. At the apex there exists a soft systolic murmur well conducted to the axilla. The pulmonic second sound is accentuated.

October 4, 1909. A soft diastolic murmur is also heard at the apex strictly localized. The systolic murmur is distinct and much rougher in quality than when he entered.

October 8, 1909. A pleuro-pericardial friction rub is heard at the left border of the heart. A thrill, systolic in time is now palpable at the apex.

Spleen.—Dullness begins at the eighth rib and extends downward and inward to the costal border.

The abdomen is universally tympanitic.

The patient's mental condition is clear. The cranial nerves functionate normally. The deep and superficial reflexes are intact. No petechiae were discovered.

Owing to the appearance under observation of the apical diastolic murmur and the systolic thrill, together with a marked change in the quality of the old apical systolic murmur, a probable diagnosis was made of pernicious endocarditis engrafted on his former chronic endocarditis of the mitral valve. This diagnosis was confirmed by the findings of a blood culture which was taken shortly after his admission, from which a pure culture of *Staphylococcus albus* was grown. A vaccine was made from this growth by Dr. H. W. Carey and the patient received seven injections of 300,000,000 organisms each during his stay in the hospital, with the result that he made clinically a perfect recovery. He started work as a motorman and continued for over a year, when he developed a fresh attack of acute articular rheumatism, followed by endocarditis from which he succumbed. No autopsy was permitted.

CASE VI.—Pernicious Endocarditis of the cardiac type, of five months' duration; death, no autopsy.

Miss C. C., aged 21 years, living at home.

Father and mother living and well. Has one sister living and in perfect health. Has no brothers.

Personal History.—Has had all the infectious and contagious diseases of childhood. At seven years of age she had tonsillitis which was fol-

lowed by a severe attack of acute articular rheumatism with endocarditis as a complication which was localized to the region of the mitral valve, leaving it permanently crippled. Perfect compensation was not established until two years after the onset of this attack. At thirteen years of age she developed her second attack of scarlet fever, from which she made an uneventful recovery and remained in perfect health until November 1, 1912. She then developed severe headache, chilly feelings and a temperature of 102 F. These symptoms continued for about three months, when Dr. Waldo, her attending physician, asked me to see the case in consultation.

Examination.—The patient looks very ill. She is of a sallow complexion, the lips and finger tips are cyanotic and the mucous surfaces unusually pale. Respirations are short and there is evidently much dyspnoea. On the hands and feet are several elevated, tender, erythematous patches, about the size of a pea, "Osler's sign." No petechiae were discoverable and no evidence of embolic infarctions were anywhere seen. The erythematous patches have appeared in crops ever since she first took ill.

The cardiac apex is in the fifth interspace slightly to the left of the left mamillary line. There is a delicate systolic thrill at the apex. The cardiac dullness begins above at the fourth rib and extends from one cm. to the right of the sternal border to the left mamillary line. At the apex exists a soft murmur conducted to the axilla and to the angle of the left scapula. The pulmonic second sound is accentuated and the aortic second sound impure.

The lungs showed everywhere a normal percussion note and good vesicular murmur. No rales at the bases of lungs posteriorly.

The liver dullness begins in the right mamillary line at the level of the fifth rib and extends to the costal border. The inferior border of the right lobe is firm, smooth and not tender.

The urine has been examined several times by Dr. Waldo and found normal.

The abdomen is universally tympanitic and flat.

The spleen is palpable below the costal border. Its dullness began at the eighth rib in the mid-axillary line and extended downward and inward to the costal border. It is not tender on palpation or percussion.

The kidneys were not palpable.

The symptoms taken collectively, led to a diagnosis of pernicious endocarditis of the cardiac type. We advised that a blood culture be made and Dr. Carey was able a few days later to cultivate a bacillus from the blood which, both morphologically and culturally closely resembled *B. influenzae*. *Micrococcus tetragenus*, which was also found, was probably a contamination. An autogenous vaccine was speedily made and she received at the onset two injections weekly of 50 millions each, gradually increasing the dosage. Though continued over a long period, the vaccine had no controlling influence over the course or progression of the disease.

February 15, 1913, I saw her again with Dr. Waldo. She then appeared decidedly worse and stated that the day previously she had suddenly lost a part of the central vision of her right eye. Examination of the heart disclosed a soft diastolic murmur with its point of maximum intensity at the aortic interspace which was conducted feebly downward toward the apex. The previously existing soft mitral murmur had now taken on a decidedly musical character. A few petechiae were discovered on her trunk and extremities and quite a crop of painful erythematous patches on the hands and about the fingers. The ophthalmoscope showed a fresh retinal hemorrhage just outside the macula of the right eye. The leucocyte count showed 28,000 cells. The urine was negative.

She continued to grow progressively worse and died in April, 1913, about five months after the onset of her illness. No post-mortem examination was allowed.

REFUSE DISPOSAL.

Read before the City Plan Association, Albany, N. Y., January 15, 1913.

By W. THOMAS WOOLEY, C. E.,
City Engineer and Architect, Schenectady, N. Y.

Safe and efficient municipal house-cleaning is not confined, by any means, to the removal and proper disposal of those wastes which are removed by water carriage in underground pipes called "sewers." There remains various solid matter, such as kitchen wastes and general rubbish from the household and industrial establishments, and to which the general term of "refuse" is usually applied.

Until within the last twenty years the collection and disposal of this refuse was generally done in a rather hit-or-miss style; sometimes by the municipalities, and sometimes by private concerns or individuals who collected that part of the refuse, such as garbage, from which profit could be obtained by utilizing it for feeding to swine or otherwise. At present, however, the question of the collection and disposal of refuse has been carefully studied at a number of places. Refuse disposal has become a science and sanitary engineers are now able to advise municipalities as to a proper procedure for each local problem in such a way that the best and most economical method for each particular municipality may be adopted.

Such a study includes the relationship between methods of collection, availability of sites for incineration or reduction plants

within the city, railroad facilities, kinds of refuse to be disposed of, the possibility of disposing of ashes and some kinds of refuse for filling low land, and the salability of the by-products from reduction or incineration plants.

TWO-CAN SYSTEM.

As now practiced by most municipalities, refuse is placed by the householder in watertight metal cans. Garbage, ashes and rubbish are, in some cities, mixed together and deposited in a single can. Ashes and rubbish may be put together in a can separate from the garbage can, thus making a "two can" system. In some cities, such as New York and Buffalo, three cans are used, calling for complete separation of the three principal kinds of refuse. From a sanitary standpoint and also from the viewpoint of the householder the one-can system is perhaps the best. With the wet garbage mixed with ashes and rubbish, nuisances from the decomposition of the garbage and from dust, flies and from the liquid portion of the garbage are much lessened. It is also easier to keep the wagons, in which the garbage is collected, clean and free from the obnoxious odors that are apt to come from wagons used to collect garbage only. In Milwaukee, public opinion was so strong against the foul-smelling garbage wagons that it was necessary to collect the garbage at night. It is difficult, unless the wagons are washed, and disinfected with great care, to free them entirely from this troublesome odor.

ONE-CAN SYSTEM.

The disadvantage of the one-can system, and in fact the reason for not using it in many places, is that with such a method of collection it is not practicable to utilize any of the ordinary methods of disposal, except incineration. In fact, this whole question of collection depends in a large degree upon the method of disposal. Taking the question of collection alone, however, there is no doubt that a one-can system, with its mixed collection of all kinds of refuse from the household, is cleaner, more sanitary, and much easier of adoption.

Refuse, in general, is disposed of, ordinarily, in five ways, as follows: dumping on land, sea disposal, feeding to pigs, incineration, and reduction, or a combination of some of these.

DUMPED BROADCAST.

In some places not only the ashes and rubbish, but also garbage and sometimes night soil are dumped broadcast on waste places surrounding the city. At other places trenches are dug and the garbage and night soil and the rubbish are buried. The dumping of refuse broadcast is a very unsatisfactory one from a sanitary standpoint. Even if care is taken in burning papers and rubbish and in covering the night soil with ashes or otherwise burying it, there are usually disagreeable odors from decomposing garbage and from the smoke where the papers and rubbish are burned. The dumping of night soil on land is especially to be condemned, as it is not at all unlikely that infectious diseases are oftentimes carried by flies from just such unsanitary places.

The burying of garbage in trenches make a satisfactory disposal where there is available land reasonably near the points of collection. It is not often possible, however, to so dispose of the refuse from large cities. Even in the cases where such disposal is available care must be taken in the disposal of rubbish, such as discarded clothing and bedding from sick rooms. Otherwise there is a likelihood of infection being transmitted in this way.

DUMPING IN WATER.

Dumping of refuse in large bodies of water, such as our Great Lakes, or in the oceans or very large rivers, is practiced by some municipalities, but the conditions are seldom favorable enough to make this a method of general interest.

In many New England towns and small cities and elsewhere, garbage is collected, sometimes by firms in the business of raising pigs and sometimes by farmers who use it in a small way for the same purpose. While theoretically there may be some advantages in this system of disposal for small places, from a practical standpoint it is questionable. Garbage to be used as feed for pigs should be collected quite often, so that it will be fresh when it reaches the piggeries and it should be more carefully sorted at the household than with other methods of disposal.

COOK REFUSE.

There are several cities that collect the garbage separately from other solid wastes and treat it by the reduction process

for the extraction of grease, after thorough cooking in closed digesters to which live steam is applied. This is done at Boston, New York, Buffalo, Wilmington, Philadelphia and Washington by private companies and by the cities of Cleveland and Columbus, Ohio. There are also a number of other plants in cities of smaller size where private companies have short-term contracts and where frequently commercialism overtops the significance of sanitary treatment as to freedom from odors.

Recently the engineering papers have shown in detail the operating results at Columbus and Cleveland. At the latter the cost of treatment, as compared with the receipts from the sale of grease and the tankage to be used as a basis for fertilizers, has shown a net income per ton of raw garbage ranging from \$0.258 to \$1.621. At Columbus this figure is given as \$0.775 per ton of raw garbage. In each instance a deduction is made for the cost of delivering the garbage by freight to the reduction plant, which is several miles removed from the center of the city. In the instance of other and smaller cities the results are not so favorable.

COLUMBUS WORKS.

The total cost of the Columbus works, including land, loading station, garbage cars, railroad siding and engineering, was \$235,560. These works have a rated capacity of 160 tons of garbage per day for a city which, in 1910, had a population of 181,511.

The treatment of garbage or the wastes from kitchens does not tell the whole story, as there still remains to be treated the general rubbish of the city which, as above stated, has more sanitary significance in many instances than has the garbage itself. This is an added element of cost and in some instances, such as at Buffalo, New York, an incineration plant has been installed for the rubbish, while the garbage itself is treated by the reduction process.

USED FOR STEAM.

Where the refuse includes general household rubbish, as well as garbage, stable manure, boxes, packing materials and general debris from the business district, there are scores of plants in Europe where these wastes are received, properly mixed and

burned in specially constructed furnaces, the gases from which are led under boilers to generate steam that is used in the operation of lighting plants, pumping plants and the like. On an average about one pound of steam may be produced from one pound of mixed refuse. In plants of this type the temperature is higher than 1,200 degrees Fahrenheit and the organic matters are burned to an ash. From ashes and other rubbish that is burned there is a clinker which is available for use in making concrete.

Such high temperature incinerators are distinct from numerous so-called low temperature furnaces in use in America where it is necessary to add coal to the fires in order to get even fairly complete combustion of garbage. The oldest high temperature-incinerator plant in America with which we are familiar is at Westmount, near Montreal, Canada. Here the refuse is burned and the heat used under boilers. The steam from the boilers and from others which are fed with coal is used for driving the generators at the municipal electric light plant. The refuse in this way is used economically, as in a town of about 11,000 population the reports indicate that there is an annual saving in the purchase of about 1,000 tons of coal which would be needed were the refuse not used for steam generation.

INSTALL PLANTS.

Plants of this type have been installed at Vancouver, Seattle, Milwaukee and New Brighton (Staten Island) New York, and several new plants elsewhere are being built at present. The economy varies with the composition of the refuse, particularly as to combustible matters and water, and the value of the power produced. The high temperature incinerator is of less economical merit where cheap water power is available.

There is frequently a considerable difference of opinion between the advocates of the two methods of refuse disposal, incineration and reduction. The sanitarians lean to that method which destroys in an unobjectionable manner all municipal waste matter, while the business man is apt to keep in mind the financial advantages of reduction plants. With incineration there is no income from by-products, with the exception of the sale of power

and clinkers, although all municipal refuse, including ashes, rubbish and garbage, may be actually destroyed. With reduction where only garbage is handled, with such rubbish as is unavoidably collected, it is possible to obtain a substantial income from the sale of grease and tankage.

The two examples which show quite clearly the difference of the two methods are the incinerator at Milwaukee, Wisconsin, and the reduction plant at Cleveland, Ohio.

MILWAUKEE PLANT.

The Milwaukee incinerating plant was built in 1910 with a daily capacity of about 300 tons of mixed refuse. The plant is handling at present, on an average, about 150 tons daily. The garbage from nearly the entire city is destroyed, with some manure, and with ashes and rubbish from that part of the city near the incinerator plant. At the present time the garbage is collected separately in carts having watertight steel bodies with a capacity of about 1.5 cubic yards. From 225 to 250 loads of garbage are collected daily. The ashes and rubbish are collected in wagons holding about three cubic yards. The manure is brought to the plant by the stable owners. It is intended to collect all of the garbage in the city and to collect only enough ashes and rubbish to provide sufficient fuel for burning it.

The incinerator is of the Heenan & Froud type. The building is about one hundred feet square and forty-five feet high in the center. There are four incinerator units of seventy-five tons capacity each. The upper floor of the building is used for storage hoppers and as a mixing and feeding floor. The main floor is the clinkering and operating floor, below which is a basement for use in removing clinker and cleaning the furnaces and boilers.

RUBBISH WAGONS.

The rubbish and ash wagons have attached bodies and their contents are dumped into steel boxes at the south end of the building. The garbage wagons have removable bodies which are handled directly by the crane at the top of the building. The contents of the dumping boxes and wagon boxes are thus dis-

tributed through it to separate hoppers on the storage floor as required.

Just back of the storage hoppers is the mixing floor, which is connected by chutes with the furnaces. In charging the furnaces the chutes are filled with refuse selected from the storage hoppers to suit the needs of the furnace to be charged. The chute opening is operated mechanically by the fireman from the floor in front of the furnace. Each unit of the incinerator consists of a furnace proper, water tube boiler, heater, and forced-draught apparatus. The furnaces are built with brick walls and arches. Each furnace contains six cells. The refuse to be burned is first dropped from the charging chute onto the drying grate in the back part of the furnace and is raked forward to the fire as required. All smoke and dust pass through the combustion chamber back of the furnaces before passing to the boilers, and there is no opportunity for odors to pass to the stack.

REVENUE.

So far, no arrangements have been made to utilize the steam generated in the plant or to sell the clinker. It has been estimated by the Bureau of Economy and Efficiency in Milwaukee, that revenue from these sources may be obtained as follows:

Steam	\$36,576.00
Clinker	7,020.00
Dust for asphalt filler	1,147.00
Refuse pickings	400.00
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Total	\$45,143.00

The total cost of operation of the plant per ton of refuse is \$1.62, including maintenance, insurance, interest, taxes, and depreciation. Excluding these overhead charges the cost is about \$1.04.

The cost of the plant for a 300-ton capacity, exclusive of land, was \$212,000. Since the Milwaukee plant was completed in the early part of 1910, other plants have been erected, notably at Paterson, New Jersey, and Clifton, New York, the cost of

which has been somewhat greater than the above. These plants have, however, been an improvement in some ways on the Milwaukee plant in the reduced cost of operation. Mechanical clinkering arrangements and improvements in feeding have allowed the builders to guarantee cost of incineration of as low as \$0.40 per ton of refuse.

CLEVELAND PLANT.

The reduction plant of Cleveland was purchased by the city from the Newburgh Reduction Company in 1904, and has been operated by the city since that time. The garbage of the city is collected in watertight steel-bodied wagons and is delivered to a centrally-located collection station on the Baltimore & Ohio Railroad. There are eighty-four wagon routes in the city, and, in all, about one hundred and thirty horses are used, the city maintaining its own stable. The wagons hold, on an average, from 1.75 to two tons. At the loading station the garbage is dumped into railroad cars and taken to the reduction works at Willow, Ohio, about 8.5 miles from the loading station. When they arrive at the plant these cars are dumped upon a concrete floor in the receiving station, from which it is taken by means of conveyors to the digestors. These digestors are twenty-four in number, holding about 3.5 tons each. After being charged, steam is turned into the digestors and the garbage cooked for about six hours, after which steam is applied to the top of the tank and the free water forced from the tankage. The tankage is then withdrawn and conveyed to driers. The water which is drawn off from the tankage goes to settling vats, where it is allowed to collect and from which the grease is skimmed. The tankage after drying is taken to the percolators or extractors, where the grease is removed by the use of naphtha. After this it is screened and all foreign matter, such as rags, cans, glass, etc., are removed.

The tankage is sold as a base for fertilizers and the grease to manufacturers of candles, soap, etc. The average value of tankage is about \$6.00 per ton and of grease \$0.035 per pound. During 1911 there were about 46,500 tons of garbage handled at this plant.

**DETAILS OF INCOME AND EXPENSES FOR THE CLEVELAND, OHIO,
REDUCTION WORKS FOR THE YEAR 1911.**

Gross Income.

From sale of products.....	\$181,244.69
From inventory of products.....	8,021.62
From sale of raw material.....	83.45
From rents	66.00
From miscellaneous income collection department.....	478.45
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	\$189,894.21

Average price of grease for 1911 was \$4.57 per 100 lbs.

Average price of tankage for 1911 was \$6.50 per ton.

Expense.

At reduction plant:

Labor at plant.....	\$46,818.66
Coal at plant.....	7,455.97
Natural gas at plant.....	17,337.12
Supervision and clerk hire.....	3,358.93
Repairs and renewals to plant.....	8,733.92
Office supplies	175.59
Oil, waste, telephone, water, etc.....	4,195.33
Insurance	417.80
Freight on product.....	
Analyses, weighing cars, etc.....	68.25
Gasoline	
	<hr/>
	\$92,314.07

At collection station:

Labor, teamsters, etc.....	\$81,205.24
Feed	20,195.09
Freight on garbage.....	7,268.77
Supervision and clerk hire.....	3,361.44
Shoeing	3,429.89
Repairs to cars and wagons.....	3,998.99
Repairs to harnesses.....	2,687.83
Insurance	980.77
All other sundry expenses.....	4,942.84
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	\$128,070.86

Extraordinary Expenses.

Losses on horses, cars, etc.....	\$824.29
Losses on bad accounts	
Depreciation on plant, Willow, Ohio.....	17,780.01
Depreciation on wagons, horses, stable and other equipment at Canal St., at 10% per annum....	10,561.58
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	\$29,165.88

Total Expenses.

At Willow, Ohio.....	\$92,314.70
At Canal Street.....	128,070.86
Extraordinary expenses	29,165.88
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Total expenses	\$249,551.44
Total income	189,894.21
	<hr/>
Net operating expense.....	\$59,657.23

The above items of expense do not include interest on the investment nor taxes on the property, nor do they include any part of the salaries of the officers of other city departments, which departments render a service to the garbage disposal department, such as the Director of Public Service, City Auditor, City Treasurer, City Solicitor, Paymaster and Purchasing Agent, which items would amount to about \$20,000 per annum. The \$20,000 is made up as follows:

Interest at 5% on \$200,000.....	\$10,000.00
Taxes at 1% on \$200,000.....	2,000.00
Services of other departments.....	8,000.00
	<hr/>
	\$20,000.00
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	\$79,657.23

THE ILL-EFFECTS OF EXERTION IN ANGINA PECTORIS, WITH REPORT OF A CASE.

Read before the Medical Society of the County of Albany, March 4, 1913.

By F. L. CLASSEN, M. D.

There is nothing new to offer in presenting the subject of Angina Pectoris, but I have in mind a case which was under my observation for a long time and in which the ill-effects of exertion were so well demonstrated that I think it may possibly be of some interest to this Society.

Angina Pectoris is a term employed to designate a group of symptoms produced by the heart of which pain is the chief characteristic. There are numerous theories for the cause of anginal pain—that it is a neuralgia of the cardiac nerves; that it is a cramp of the heart muscle; that it is a spasm of the coronary arteries with a great increase of the intra-cardiac pressure.

Mackenzie in his most excellent treatise on the heart says, "An irritable focus is produced in the cord after a violent stimulation of a visceral lesion," and he further says, "The usual description of pain in Angina Pectoris is that it is felt in the heart and shoots into the arm, or that there are two pains, a local pain in the heart and a referred pain in the arm. If, however, a careful analysis be made of all the symptoms present, facts will be found that practically demonstrate that in Angina Pectoris there is but one kind of pain and that its production is in accordance with the law I have attempted to establish, namely, that it is *viscero-sensory reflex*. That the pain in the gravest cases may be felt in regions distant from the heart, as in the left arm; that this pain is identical in character with that felt over the heart; that the pain may originally start in parts distant from the heart and gradually approach and persist over the heart; and lastly, that the tissues of the external body-wall over the heart may be found extremely hyperalgesic after the pain has passed away."

There are numerous causes for the attack. Some cases of Angina Pectoris are the result of dilatation dependent upon the undue pressure which many of these cases show. It is particularly in the cases in which the toxic element brings about high

arterial tension that the heart is overcome by the enormous amount of work put upon it. The heart muscle, weakened by the toxæmia, is less capable of standing the increased strain, gives way to the high pressure and dilates. This toxic condition is frequently the result of the storing in the body of the products of gastro-intestinal auto-intoxication, or may be the result of tobacco or ingested poison as coffee, or the products of retrograde tissue metamorphosis may be imperfectly split up or not properly eliminated.

Slight bodily exertion, such as walking up-hill, stooping over to pick up something from the floor or hurrying to catch a car, is contributory, but the capacity for exertion varies greatly in different individuals, as each one has certain definite limitations beyond which he cannot go without pain or injury. The physician must learn the kind and amount of work the individual is capable of performing without producing symptoms. One person may walk up stairs without serious effect, while another can only walk on the level.

The influence of a full stomach is frequently harmful. Food which ferments easily in the stomach produces gaseous distension and gives not alone painful symptoms, but not infrequently causes an increase in the pulse rate. Excessive liquids, by distending the stomach and making tension upon the dependent parts, are particularly prone to produce ill effects.

Immoderate venery and emotional excitement are prolific causes for some attacks of praecordial pain. Tobacco is especially deleterious.

During an attack of Angina Pectoris, the chief symptom is pain, more or less severe, which is referred to some portion of the distribution of the upper four left dorsal nerves in the chest and arms. Sometimes it is referred to the epigastrium. Along with the pain, or following it, is a sense of constriction in the chest which is due to reflex stimulation of the intercostal muscles.

High arterial tension is frequently associated with an attack, and in fatal cases the coronary arteries are usually diseased with co-existing myocardial changes.

The treatment comes under two heads—giving relief during an attack, and improving the condition of the heart between

the attacks. For the first, vaso-dilators such as amyl nitrite, glonin, whiskey, and hot drinks. If the pain is severe, morphia should be given. For the second, the patient should be instructed to refrain from any undue physical or mental effort, avoid over-indulgence in food, alcohol and tobacco. Rest is essential. Even when cases are so severe that the least exertion brings on an attack, rest for a long period may restore the heart and induce a cessation of symptoms. Sufferers from anginal attacks may live for years, but it is most essential that they exercise great caution in their daily habits.

REPORT OF CASE.

Name—S. L. B. Male—Age 53. Merchant. Single. Habits good.

Family history. Father died from valvular disease of the heart, age 56. Mother died aged 79, old age.

Patient suffered his first attack September 11, 1911. Slight pain and discomfort in the praecordial region. Another attack on September 12, 1911. Pain more severe. Blood pressure 180 mm. Morphia gr. $\frac{1}{4}$ administered hypodermically. He remained in the house until September 22, 1911, when he resumed his business. He was given as medication glonin and sajodin. He was advised not to exert himself in any way, and to particularly avoid walking up-hill. An examination of the heart revealed nothing abnormal. He was in good condition until January 11, 1912, when he had another slight attack. He was confined to the house two days. Was again cautioned about exerting himself. Nitro-glycerin, sajodin and crataegus oxycantha taken at intervals.

He was in good health until January 9, 1913, when another attack occurred after walking up-hill against a strong wind. He had dyspncea and a constricted feeling in the chest. Pain slight. He went to his business January 11, 1913, but felt so badly that he returned home where I saw him in the evening. Pain slight. Pulse 80. Blood pressure 180 mm. No abnormal sounds in the heart. Dr. Leo H. Neuman saw him in consultation. Patient was advised to keep quiet, and at that time was comfortable with every prospect of resuming his business, until January 19, 1913, when he took a tub bath and the exertion

brought on a most violent seizure. I was hurriedly called and found him in great distress, cold sweat on forehead, and suffering severe pain with constriction in chest. Morphia gr. $\frac{1}{4}$ administered hypodermically which relieved him. An examination of the heart revealed murmurs over the various orifices. Apex beat displaced two inches below and to the left of the nipple line. Blood pressure 120 mm., acute dilatation having occurred. Dr. Neuman saw him in consultation and gave an unfavorable prognosis. From the time of his attack on January 19th, 1913, until January 31st, 1913, when he died, patient was in a semi-comatose condition. Urinary analysis showed albumen, small amount, with hyaline, epithelia and granular casts.

THE EFFECTS OF BACTERIAL DISEASE OF THE DENTAL STRUCTURES UPON THE GENERAL HEALTH.

*Read at the Annual Meeting of the Third District Dental Society,
Albany, N. Y., April 22, 1913.*

By NELSON K. FROMM, A. B., M. D.

The medical profession has been very tardy in its appreciation of the intimate causal relation between infectious processes of the teeth and contiguous structures, and the general economy. Up to within very recent years the physician's only interest in the oral cavity of his patient, was to ascertain the condition of the tongue, because that was a sure index to the state of the alimentary tract and the presence or absence of febrile disease. Until very recently pyorrhea alveolaris, gingivitis, and similar terms would cause the physician, in consternation, to seek recourse to his lexicon for enlightenment on these unknown conditions. It has not necessarily been the fault of the medical man that dental science has been an almost unknown quantity to him; rather it is the failure of the curricula of the medical schools to give proper stomatologic instruction to the student, to which the error should be assigned.

But fortunately we have entered upon the period of the Renaissance. A light is appearing on the horizon of medical indifference, causing physicians and surgeons to daily throw off the cloak of ennui. Internists are beginning to appreciate

that dental disease, long looked upon as merely a local condition, without constitutional sequelae, is of tremendous importance and often a sole etiologic factor in many of the ailments to which human flesh is heir.

Briefly stated, the bearing that the mouth has on the organism, is governed by the ability of the structures therein contained to perform their normal functions and to contribute their share toward the complicated method of providing nutriment to the animal system. If the oral structures are at variance with the normal, disease must necessarily result.

Although considerable has been written in recent years, relative to the unhygienic mouth as an etiologic factor in systemic disease, there is, however, much to be done to establish in medical, dental, and lay minds a knowledge of the tremendous bearing that certain mouth and jaw diseases have on the general health; and, furthermore, the manner in which many disorders can be early detected by a careful inspection of buccal cavity.

It shall be our endeavor to say a few words as the result of a perusal of medical and dental writings, especially those which treat of the reciprocal influence of abnormal bacterial conditions of the mouth on the general economy of the individual. There is no one who appreciates this important interrelation more than Sir William Osler, probably the world's most celebrated physician. He says: "There is not any one thing more important to the public than the hygiene of the mouth. If I were asked to say whether more physical deterioration was produced by alcohol or by defective teeth, I should without hesitation say, defective teeth." Words like these, emanating from this distinguished physician and teacher, surely have a double force.

Medical literature abounds with instances illustrating the serious systemic by-effects of suppurative alveolitis. Dr. John B. Murphy of Chicago, former president of the American Medical Association, and one of America's foremost surgeons, in a recent communication cites a typical case of metastatic infectious arthritis, due without question in his mind to subacute alveolar suppuration. He further adds: "We had at one time in The Mercy Hospital four cases of rheumatoid arthritis, so-called, with sinuses or ulcers in the alveolar process, each bearing practically the same causal relation to the metastatic arthritic condition."

As is well known, a very large number of micro-organisms have been described as the casual factor in pyorrhea; the streptococcus and the staphylococcus aureus and albus, being those most commonly cited. Recently Noguchi of the Rockefeller Institute for Medical Research has isolated a new species of bacterial life from the disease in question. This investigator has succeeded in cultivating and carrying out research work with a pure culture of a mucin forming spirocheta. He believes that it is this bacterium which is responsible for the fetid odor that accompanies pyorrhea. This micro-organism, which the discoverer has termed the *Treponema Mucosum* is apparently not truly parasitic but requires an injured state of tissue for its growth, when in conjunction with secondary bacterial invaders, it exerts its pyogenic action.

The effect upon the rest of the body of the constant swallowing of purulent material from marked cases of pyorrhea has been the subject of much debate among dentists, but has not been given very serious thought by physicians. Medical men have been accustomed to calmly dismissing this subject from their minds, deluding themselves into the belief and assuring their patients that all bacteria and purulent material are destroyed in the stomach by the gastric secretions. They have apparently forgotten Miller's experiments published twenty years ago and since corroborated by many other observers. Miller showed clearly that mouth bacteria are carried into the stomach and thence to the intestinal tract and there propagate. As pointed out by Rhein, granting that certain forms of bacterial life are destroyed in normal quantities of gastric juice, the fact remains that the stomach contains its full share of these acid peptic secretions only a small fraction of the time; that is at the height of the digestive process. Between meals there are only small amounts of active bacterial inhibitory fluids in the stomach. Recognizing the fact that everyone is constantly swallowing the bacteria normally present in healthy mouths and which are probably rendered innocuous by the normal intestinal flora, we must appreciate that the ingestion of large amounts of pus containing virulent bacterial bodies is a proposition of an entirely different nature. The species, virulence and number of the micro-organisms have a strong influence as to their ability to

overcome the surface immunity of the digestive tract. All forms of disease of the stomach and intestines are possible. By means of their development in the digestive canal such bacteria are very easily absorbed into the circulation and taken up by the lymphatic system. If this fortress of the body succumbs to the invasion of the bacteria and their toxic products, any and every of the vital organs can be attacked.

Hunter gives the following very lucid classification of the possible results of pyorrhea:

First—Local affections such as stomatitis, periostitis, sinus disease, inflammation and infection of the tonsils and pharynx. Besides these conditions many cases of disease of the middle ear and eye and a host of lesions of the skin very remote from the mouth are encountered. Among these may be mentioned acne, alopecia, eczema, erythema, herpes, seborrhea, erysipelas and others.

Second—Glandular affections, especially about the neck.

Third—Gastric and intestinal affections, such as septic gastritis, septic enteritis, colitis and proctitis, appendicitis and cholecystitis.

Fourth—Hematogenous infections causing pleurisies, nephritis, pyelitis, and perinephritic abscess.

All of these pathological conditions have been noted by Hunter as a result of his hospital investigation into their etiology.

Baker in a recent communication presents a compilation of diseases attributed to mouth conditions. According to his list one hundred twenty-five different affections were traced by scientific men to dental and oral disorders. It is interesting to note that almost all the authors quoted are graduates of medicine; this is strong evidence toward the verification of their findings and would tend to nullify any accusation that their results were founded upon biased observations.

Grieves and Baer of Johns Hopkins University have accumulated over one hundred cases of apical dental infection as the primary portal of entry for infectious arthritis, they having been able in some cases to isolate the infecting organism.

Wrigman and Turner report in the London *Lancet* forty-two cases of rheumatism and gout, in the majority of which they believe pyorrhea to have been the direct cause, for the reason

that a cure of the local condition was followed by a subsidence of the constitutional symptoms. Pike of Philadelphia reports a case of septic multiple joint disease showing the classical symptoms of septic endocarditis, cultures from the blood indicating the presence of streptococci. The only etiologic factor discoverable was the presence of pus at the roots of the molars of the lower jaw, a condition which had been neglected for several months.

A few words concerning the teeth of the child. A wave of enthusiasm is at present being created so that oral cleanliness as a prophylactic measure against disease is receiving earnest attention both here and abroad. The municipal appointment of dental examiners in the public schools in many parts of this and other countries is evidence of the interest that has been manifested in the care of the mouth and teeth of the child. For this important step in the right direction great credit is due the dental profession, since its members have been mainly instrumental in bringing it about. The medical professional has likewise been a factor in proving to city officials the need for this advance in the protection of the public health.

Records of the Indiana State Board of Health prove that pupils possessing defective teeth require nine months more of study each on an average to graduate from the public schools than those whose teeth are sound. Several years ago in Valparaiso, Indiana, school inspection was instituted to determine the best ways of terminating an epidemic of scarlet fever that had infested the city for three years. In one school one hundred ninety children were examined and nine hundred thirty-seven infected dental cavities found. Fifty of the children had had scarlet fever during the epidemic and two hundred thirty-eight cavities were found in their teeth. From that time on, the health authorities looked to the condition of the teeth as well as the tonsils and nose and insisted that all dental cavities be filled at once upon release from quarantine.

That the care of the teeth is an important factor in the care of the child and that the mental and physical efficiency of school children can greatly be aided by the proper care of the dental structures are facts attested to by experiments in Germany, which cover a wide field. There, dental infirmaries connected

with the school have been in operation for a sufficient length of time to demonstrate:

First.—That the time expended in putting the teeth in order was far less than the time formerly lost by reason of disability caused by diseased dental tissues.

Second.—That the cost of keeping the teeth in order was *far* more than compensated for by better health and a consequent reduction in medical expenses.

Third.—That the child became physically stronger, attained a higher average in his studies, was easier to control and apparently happier.

There is yet one topic to discuss; one which I have purposely left until the last. To my mind the question of oral syphilis is the most momentous one with which dental practitioners are called upon to deal. The laity and the medical profession are now in a state bordering on hysteria in their desire to check the ravages of tuberculosis. Everywhere we turn, to press, to bill-board and lecture platform, on every side, do we witness the war waged to exterminate the so-called "Great White Plague." But what do we hear of syphilitic disease? Practically nothing! If tuberculosis is the "Great White Plague," is not syphilis the Great White Scourge?

Many cases of primary syphilis are undiagnosed. The unfortunate goes on unnoticed and often untreated until locomotor ataxia, paretic dementia or other forms of brain degeneration draw a veil over the unpleasant picture. It is in this regard that it is necessary to recall the dentist's grave responsibility in relation to the correct diagnosis, of the early syphilitic manifestations in the oral cavity. Fornier in his well known statistics, states that of one thousand extra-genital primary syphilitic lesions, eight hundred forty-nine were upon the head. Of these five hundred sixty-seven were upon the lip, seventy-five on the tongue, sixty-nine on the tonsils and twelve on the gums. So fifty per cent of extra-genital chancres may be seen by the dentist, before disease is suspected by the patient and a physician consulted. In view of the terrible and far-reaching effects of this disease, should the importance of being familiar with the pathology of syphilitic infection, I believe, be indelibly impressed upon the dental surgeon's mind.

In concluding, I would point out that the reciprocal relations of the dental and medical professions are becoming more pronounced every day and I venture to forecast that the time is not far distant when dentistry shall become an integral part of scientific medicine in its broadest sense. Then, and only then, will dental science have come into its own.

Editorial

None of the ballads now existing relates the death of Robin Hood. The vulgar tradition is, that he perished by assassination, in a nunnery, whither, feeling ill, he had gone to seek assistance. He was to be bled; and the nun who could perform this operation, having accidentally recognized him, did it in such a manner that it caused his death. This account, the truth of which can neither be affirmed nor contradicted, is quite conformable to the manners of the twelfth century. At that time, in the rich monasteries, many women employed themselves in studying medicine, and compounding remedies, which they offered gratuitously to the poor.

AUGUSTINE THIERRY.

History of the Conquest of England by the Normans.



The Annual Report of the Guild for the year 1912, recently issued, shows continued activity of Albany Guild. this most helpful association. The Guild is an organization of ladies of Albany, having for its purpose the proper care of the sick in their homes. There are now in the employment of the Guild six graduate trained nurses whose duties are essentially those of the district nurse. They visit the sick in their homes and carry out the directions of the attending physicians. In addition to these six nurses, two nurses are engaged solely with the care of cases of tuberculosis, and

all are under the direction of a superintendent and an assistant superintendent, who are also qualified hospital nurses. The organization is completed by a group of seven pupils, who remain with the patients and are instructed in their work by the visiting nurses. The course of instruction covers two years or more, and at the end of that time the pupils receive the certificate of the Guild, and are thus qualified to engage upon private work, for which they agree to accept a somewhat smaller compensation than is generally recognized for the hospital graduate. Their work is thus intensely practical, and in some ways has advantages over the training in hospital in that these certified nurses have had a definite experience, not only in the care of the sick in their homes, but in the accompanying difficulties and trials of the household during the exigencies of sickness. They become expert and willing to assist in the home, and are often less technical in their requirements.

It is perhaps reasonable to refer to this particular feature of the Guild work on account of some prohibitory legislation introduced during the last session, for whatever may be the irregularities arising from the training of nurses based on lecture courses merely, a great privation would result to many people who are unable to meet the large expense of regularly graduated nurses. It is to be hoped that this feature of practical training in which The Albany Guild has been a pioneer will not in any way be interrupted or impeded by State laws.

It appears from the work of The Guild that 2,086 cases were under nursing care during the year, of which 1,986 were new cases, the total number of visits by the nurses in all departments having reached the large figure of 20,399. In addition to this the nurses assisted in the care of 4,855 patients in the various dispensaries of the city. The list of physicians who have profited by the assistance of these nurses is printed in the report, and includes practically all the practitioners of Albany.

In thus scantily reviewing a few of the striking features of this report, the reader may only be affected by astonishment and gratification that so large and effective charity is carried on by the self-sacrificing efforts of ladies of the city. Surely the city is to be congratulated upon this splendid work.

Public Health**Edited by Joseph D. Craig, M. D.**

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, APRIL, 1913.

Deaths.

Consumption	25
Typhoid fever	5
Scarlet fever	1
Measles	0
Whooping-cough	0
Diphtheria and croup	4
Gripe	0
Diarrheal disease	4
Pneumonia	16
Broncho-pneumonia	5
Bright's disease	28
Apoplexy	10
Cancer	11
Accidents and violence	9
Deaths over 70 years	30
Deaths under 1 year	23
 Total deaths	191
Death rate	23.22
Death rate less non-residents	19.57

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital	16	11
Albany Orphan Asylum	0	0
Child's Hospital	1	1
County House	3	2
Home for the Friendless	0	0
Homeopathic Hospital	9	3
Hospital for Incurables	0	0
Little Sisters of the Poor	4	0
Public Places	2	2
St. Margaret's House	5	3
St. Peter's Hospital	8	4
Austin Maternity Hospital	1	1
Albany Hospital, Tuberculosis Pavilion	2	2
Labor Pavilion	1	0
 Totals	52	29

Births	129
Still Births	13
Premature Births	3

BUREAU OF CONTAGIOUS DISEASE.

Cases reported.

Typhoid fever	156
Scarlet fever	12
Diphtheria and croup	26
Chickenpox	13
Smallpox	0
Measles	68
Whooping-cough	0
Consumption	28
Total	303

Contagious Disease in Relation to Public Schools.

	Reported. D. S. P.
Public School No. 11	I
Public School No. 14	2
Public School No. 15	I
Public School No. 16	I
Public School No. 20	2
High School	I
St. Ann's School	I
Lady of Angels School	2
St. Mary's School	I

Number of days quarantine for scarlet fever:

Longest	32	Shortest	14	Average	25	I-2
Number of days quarantine for diphtheria:						

Longest	41	Shortest	7	Average	16	2-6
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Fumigations:

Houses	54	Rooms	165
Cases of diphtheria reported			26
Cases of diphtheria in which antitoxin was used			25
Cases in which it was not used			I
Deaths after use of antitoxin			4

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive	5
Negative	21
Total	26

Living cases on record April 1, 1913..... 286
 Cases reported during April:

By card	24
Dead cases by certificate.....	7
	—
	31
Total.	317

Dead cases previously reported.....	18
Dead cases not previously reported.....	7
Removed.	5
	—
	30

Living cases on record May 1, 1913..... 287

Total tuberculosis death certificates filed during April..... 25

Out of town cases dying in Albany:

Albany Hospital	3
Albany Hospital Camp.....	2
	—
	5

Net city tuberculosis deaths..... 20

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	34
Number of new cases assigned.....	14
	—

Total.	48
Disposition of old and new cases:	

Died.	7
Hospital.	7
Not found.	1
Remaining under treatment.....	33
Number of visits made.....	134

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive	26
Initial negative	163
Release positive	15
Release negative	132
Failed.	42
	—

Total.	378
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Test of Sputum for Tuberculosis.

Initial positive	8
Initial negative	30
Total.	38

BUREAU OF MARKETS.

Market inspections	112
Public market inspections.....	18
Fish market inspections.....	2
Slaughter house inspections.....	1
Packing house inspections.....	2
Hide house inspections.....	3
Rendering plant inspections.....	1

MISCELLANEOUS.

Mercantile certificates issued to children.....	23
Factory certificates issued to children.....	14
Children's birth records on file.....	37
Number of written complaints of nuisances.....	70
Privy vaults	4
Closets.	7
Plumbing.	16
Other miscellaneous complaints.....	43
Cases assigned to health physicians.....	75
Calls made	157
Number of dead animals removed.....	441

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR APRIL, 1913.—Number of new cases, 202; classified as follows: Dispensary patients receiving home care, 9; district cases reported by health physicians, 10; charity cases reported by other physicians, 77; moderate income patients, 82; metropolitan patients, 24; old cases still under treatment, 138; total number of cases under nursing care during month, 340. Classification of diseases for the new cases: Medical, 57; surgical, 11; gynecological, 4; obstetrical under professional care, mothers 50, infants 48; eye and ear, 1; throat and nose, 2; infectious diseases in the medical list, 30. Disposition: Removed to hospitals, 11; deaths, 10; discharged cured, 102; improved, 41; unimproved, 19; number of patients still remaining under care, 157.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 5; nurses in attendance, 6; patients

carried over from last month, 2; new patients during month, 6; patients discharged, 7; visits by head obstetrician, 8; visits by attending obstetrician, 1; visits by students, 52; visits by nurses, 71; total number of visits for this department, 132.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,483; visits of instruction and supervision of clean-up work following our flood, 2000; for professional supervision of convalescents, 509; total number of visits, 3,992; cases reported to the Guild by three health physicians, and fifty other physicians; graduate nurses 8, certified nurses 4, and pupil nurses 6 on duty,

Dispensary Report.—Number of clinics held, 92; new patients, 139; old patients, 286; total number of patients treated during month, 425. Classification of clinics held: Surgical, 13; nose and throat, 7; eye and ear, 16; skin and genito-urinary, 8; medical, 13; lung, 11; dental, 0; nervous, 0; stomach, 3; children, 12; gynecological, 9.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—The regular meeting of the Medical Society of the County of Albany, was held at the Albany Medical College, Wednesday, May 14, at 8 P. M. President Leo H. Neuman delivered his address. Officers for the ensuing year were elected.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—A regular meeting of the Medical Society of the County of Schenectady was held at the County Court House, on Tuesday, May 13, 1913, at 8.30 P. M. The following papers were presented: "Diagnosis and Evil Results of Intestinal Stasis," Dr. J. H. Collins; "Medical Treatment of Intestinal Stasis," Dr. Dudley R. Kathan; "Surgical Treatment of Intestinal Stasis," Dr. C. G. McMullen.

AMERICAN MEDICAL ASSOCIATION.—The sixty-fourth annual meeting of the American Medical Association will be held at Minneapolis, Minn., June 17th, 18th and 19th. As usual, the Society will be divided into sections, programs of which have just appeared giving every evidence that the session will be one of unusual interest and value to all who attend.

NEW YORK STATE MEDICAL LIBRARY.—Director, James Wyer, Jr., announces that the New York State Medical Library is opened each weekday (Christmas, Thanksgiving, and Fourth of July excepted) from 9 A. M. to 6 P. M., and on Tuesdays and Thursdays (except during July and August) until 10 P. M.

Books may be borrowed, preferably through local libraries, by any licensed physician in the State, by full-time instructors on the faculty of any medical college, members of the house staff of any hospital, registered and certified nurses, or anyone engaged in medical work, who offers suitable references and credentials.

The borrower shall pay all transportation charges, use such care in

packing as to guard against injury in transportation, and pay for books lost or damaged.

The period of loan is two weeks, subject to one renewal for the same period; but all books must be returned at the earliest date consistent with the special study for which they are borrowed.

Physicians coming to Albany from a distance to use the library will find it to their advantage to notify the librarian in advance, as to the books or subjects desired and the date of the prospective visit.

Physicians wishing books from the Library of Surgeon General's Office may obtain them for two weeks through this or any public library by paying express charges both ways.

Physicians are earnestly requested to send gifts of books, periodicals or reprints. Even single volumes or odd numbers of periodicals of little value to the owner may help to complete valuable sets.

MEETING OF THE FOURTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.
—The Fourth International Congress on School Hygiene and the first to be held in America, at Buffalo, August 25th to 30th, will be by far the most elaborate effort yet made in this country toward getting the problem of school hygiene before the world. The first International Congress was held at Nuremburg, in 1904, the second at London in 1907, the third at Paris in 1910.

The objects of the Buffalo Congress are:

- (1) To bring together men and women interested in the health of school children.
- (2) To organize a program of papers and discussions covering the field of school hygiene.
- (3) To assemble a school exhibit representing the best that is being done in school hygiene.
- (4) To secure a commercial exhibit of practical and educational value to school people.
- (5) To publish the proceedings of this Congress and distribute them to each member.

In addition there is a plan on foot to effect a permanent organization for the purpose of carrying out school hygiene reforms in all the individual communities in this country, if not all over the world.

One of the interesting features of the Congress will be the presence of delegates representing the community interest in school hygiene, including those appointed by mayors and governors, by women's clubs, school boards, boards of health, mothers' congresses and charity organization societies and boards of trade. The program committee announces a program of two hundred and fifty papers and fifteen symposiums taking up hygiene from the following points of view:

- I. The hygiene of school, buildings, grounds, material and keep-up.
- II. The hygiene of school, administration and schedule.
- III. Medical, hygienic, and sanitary supervision in schools.

Special discussions are being arranged on the following subjects:

School Feeding; Oral Hygiene, Sex Hygiene; Conservation of Vision in School Children; Health Supervision of University Students; School Illumination; Relation between Physical Education and School Hygiene; Tuberculosis Among School Children; Physical Education and College Hygiene; The Binet-Simon Test; The Mentally Defective Child.

SHEPPARD AND ENOCH PRATT HOSPITAL.—Exercises in connection with the celebration of the Sixtieth Anniversary of the granting of the charter of the institution were held Thursday, Friday and Saturday, May 8th, 9th and 10th, 1913, at the Sheppard and Enoch Pratt Hospital, Towson, Maryland.

AMERICAN NEUROLOGICAL ASSOCIATION.—At the annual meeting held in Washington in May, Dr. Henry Hun was elected president of the Association for the ensuing year. The next meeting will be held in Albany in May, 1914.

AMERICAN THERAPEUTIC SOCIETY.—At the annual meeting of the American Therapeutic Society, held in Washington, May 5-6, Dr. Howard Van Rensselaer of Albany was elected president for the ensuing year. Dr. Reynold W. Wilcox of New York and Dr. Spencer L. Dawes of Albany were re-elected as members of the Council. The next meeting of the Society will be held in Albany in May, 1914.

AMERICAN ACADEMY OF MEDICINE.—The thirty-eighth annual meeting of the American Academy of Medicine will be held at the Leamington Hotel, Minneapolis, Minn., June 13, 14 and 15, 1913.

ASKS APPROPRIATIONS FOR LETCHWORTH VILLAGE.—The State Board of Health has sent a letter to the governor urging an appropriation of \$717,000 for Letchworth Village, the state colony for tuberculosis.

SKIM MILK MUST BE LABELED.—The Court of Appeals of Albany has upheld the constitutionality of the law which prescribes a penalty for shipping skim milk from one part of the state to another unless it is plainly marked and in doing so upheld the recovery of \$16,800 in penalties from a dealer in New York City, though the milk was for consumption in New Jersey.

EXAMINATION FOR PUBLIC HEALTH SERVICE.—The United States Treasury Department announces that boards of commissioned medical officers will be convened on May 5th and again on June 9, 1913, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service. Candidates must be between twenty-three and thirty-two years of age, graduates of a reputable medical college and of good moral standing. After four years of service, assistant surgeons are entitled to examination for promotion. Assistant surgeons

receive \$2,000; passed assistant surgeons, \$2,400; surgeons, \$3,000; senior surgeons, \$3,500; and assistant surgeon generals, \$4,000 a year. Further information or invitation may be obtained from "The Surgeon General, Public Service," Washington, D. C.

UNITED STATES CIVIL-SERVICE EXAMINATION.—The United States Civil Service Commission announces an open competitive examination for dentist, for men only, on June 4, 1913, at the places mentioned in the list printed hereon. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position at \$1,500 per annum, in the Indian Service at Large, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The Office of Indian Affairs states that in addition to the salary mentioned the incumbents in these positions will be allowed actual and necessary traveling expenses, including sleeping-car fare, incidentals, and subsistence when actually employed on duty in the field away from headquarters. All dental supplies and instruments are furnished by the Government.

These employees will have no fixed place of abode, but will be required to travel from school to school as the needs of the service require.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. Letter writing (the subject matter on a topic relative to the practice of dentistry).....	5
2. Anatomy and physiology (general questions on these branches, also with special reference to the teeth, mouth, and head)....	10
3. Chemistry, <i>materia medica</i> , and therapeutics (the preparations, properties, and reactions of chemicals, crude drugs and their preparations, their action and application, with those of other therapeutic agencies).	15
4. Dental pathology and oral surgery (the morbid processes incident to diseases and injuries of the teeth, mouth, and contingent structures, and their surgical treatment).....	20
5. Operative and prosthetic dentistry (the dental technics of general and special operative and laboratory work).....	25
6. Bacteriology, histology, and hygiene (the cultivation, isolation, demonstration of bacteria, the principles of sterilization, mounting specimens, use of microscope, the principles of general and oral hygiene, etc.).....	10
7. Orthodontia (local and constitutional irregularities in growth and development of the teeth, and their correction).....	15
 Total.	 <hr/> 100

Graduation from a regularly incorporated dental college and at least two years' experience in the practice of dentistry subsequent to graduation from such college is a prerequisite for consideration for this position.

Statements as to training, experience, and fitness are subject to verification.

Applicants for the Indian Service must be in good health.

Applicants must have reached their twenty-fifth but not their fortieth birthday on the date of the examination.

This examination is open to all men who are citizens of or owe allegiance to the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed hereon, for application and examination Form 1312. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. In applying for this examination the exact title as given at the head of this announcement should be used.

UNITED STATES CIVIL-SERVICE EXAMINATION.—The United States Civil Service Commission announces an open competitive examination for physician, for men only, on June 4, 1913, at the places mentioned in the list printed hereon. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position as they may occur in different branches of the service, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

As a result of this examination it is expected to immediately make certification for filling vacancies in the Isthmian Canal Service at entrance salaries of \$1,800 per annum, and a vacancy in the position of acting assistant surgeon in the Public Health Service at Jacksonville, Fla., at a salary of \$500 per annum. Appointees to the position of acting assistant surgeon in the Public Health Service are required to devote only part of their time to the Government service.

The scope and character of the examination, as well as the requirements for the different branches of the service and salaries of each, are contained in section 192 of the Manual of Examinations for the spring of 1913.

This examination is open to all men who are citizens of or owe allegiance to the United States, and who meet the requirements.

One application, Form 1312, is sufficient for all branches of the service except the Philippine, which requires Form B. I. A. 2.

Persons who meet the requirements and desire this examination should at once apply for either form 1312 or B. I. A. 2 and a copy of the Manual of Examinations for the spring of 1913 to the United States Civil Service Commission, Washington, D. C.; the secretary of the board

of examiners, post office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; customhouse, New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; old customhouse, St. Louis, Mo., or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. In applying for this examination the exact title as given at the head of this announcement should be used.

UNITED STATES CIVIL-SERVICE EXAMINATION.—The United States Civil Service Commission invites attention to the fact that among the vacancies to be filled as a result of the open competitive examination for physician, for men only, to be held on June 4, 1913, it is expected to fill one in this position at \$150.00 a month, for service in the insane asylum at Ancon, Canal Zone, for which an unmarried man is desired.

The Isthmian Canal Commission states that the appointee to the position mentioned must be experienced in the treatment of the insane.

HISTORICAL MEDICAL MUSEUM.—The Historical Medical Museum organized by Henry S. Wellcome, which is to be opened in London towards the end of June next, will include some subjects of exceptional historical medical interest.

An important exhibit in the science section will be a large collection of the original apparatus used by the famous Galvani in making his first experience in Galvanism in the 18th century.

A remarkable collection of votive offerings for health will be exhibited. The custom of presenting these offerings in cases of sickness is a very ancient one and the collection that will be shown is probably the finest ever brought together. It will include Graeco-Roman votive offerings of special anatomical and pathological interest in silver, bronze marble and terra cotta, together with a number of similar objects used for the same purpose in medieval and modern times.

Ancient microscopes and optical instruments, gathered from all quarters of Europe, will form another important feature and a selection of surgical instruments used by famous surgeons when operating on historical personages is promised.

The collection of amulets and charms connected with English folk medicine will be very complete. A fine collection of early medical medals and coins from the Graeco-Roman period, ancient manuscripts and early printed medical books will also be shown together with many other objects of interest to medical and scientific men.

HOSPITAL TO BE ENLARGED.—The Crouse-Irving Hospital, Syracuse, which was opened ten months ago as a private hospital, is about to be incorporated as a public hospital under the auspices of the State Board of Charities. One story in which the free wards will be located will be added to the building.

WOULD HAVE STATE PAY DOCTORS.—Homer Folks, who recently delivered the third Kennedy lecture for 1913 for the State Charities Aid Association, stated that at present six per cent of the medical men in New York were under the employ of the Department of Health. He made a plea for state control of all physicians and said, "Not until the whole medical profession is under control of state authorities can war be successfully waged on disease." Under such a system every individual in the community could be subjected to medical inspection and receive medical treatment.

THE CLIFTON MEDICAL BULLETIN.—A new Journal has appeared edited in Clifton Springs, N. Y., by the staff of the Clifton Springs Sanatorium and Hospital. Several papers of value appear in the Journal and future numbers will be commented upon in this column.

REPORT OF THE COMMISSION ON MILK STANDARDS APPOINTED BY THE NEW YORK MILK COMMITTEE.—A report of considerable interest to the medical profession at large is the one with the above title which may be gotten from the Treasury Department, Washington. To all interested in the question of proper milk, the report is recommended for its completeness as well as the concise manner in which it is presented.

CAUSES OF DEATH.—Statistics regarding the cause of death for the registration area of the United States for 1911 are presented in a bulletin soon to be issued by Director Durand, Bureau of the Census, Department of Commerce. It was prepared under the direction of Dr. Cressy L. Wilbur, chief statistician for vital statistics.

Typhoid Fever.—There were 12,451 deaths from typhoid fever in the registration area of the United States during the year 1911, a slight decrease from the number for the preceding year. The death rate was 21 per 100,000 population for 1911, 23.5 for 1910, and 21.1 for 1909. The rate for 1911 is the lowest from typhoid fever since the institution of the annual reports and probably the lowest on record. This fact and the progressive reduction in the mortality from this disease, from 32 per 100,000 population for the period 1901 to 1905 to 25.6 for the period 1906 to 1910, indicate that the public health officials of the country and the people who support their efforts are awakening to the necessity of wiping out this filth disease. The mortality from this cause in the United States is still far in excess of that of progressive European countries. If it could be reduced by three-fourths, so that it would be only 5 per 100,000 as in England and Wales, the Netherlands, and Prussia, for 1910, it would represent a saving of nearly 10,000 lives at the period of their greatest usefulness, as a rule, in the registration area alone.

The cities of 100,000 population and over having the highest death rates from typhoid fever in 1911 were: Atlanta, 66.1; Memphis, 65.4; Nashville, 53.9; Birmingham, 45.5; and Spokane, 35.6—all but the last,

cities of the South; while the lowest rates, valuable as evidence that the typhoid mortality of American cities need not exceed that of the well-regulated European cities, are recorded for Cambridge, 2.8, and Bridgeport, 3.8. Chicago and New York had the same rates for the year, 10.9; and several cities, besides Cambridge and Bridgeport, had rates under 10 per 100,000, namely Worcester, 6; Paterson, 7; Jersey City, 7.2; Lowell, 7.3; and Boston 8.7.

Measles.—Measles caused 5,922 deaths in the registration area during 1911, equivalent to a death rate of 10 per 100,000. The death rate was somewhat less than that of the preceding year, 12.3, but exceeded that for 1909, 9.6, and 1908, 9.9. Kentucky had the highest death rate from measles, 19.7, of all the registration states; Missouri the next highest, 18.7; the North Carolina municipalities, 15.5, coming next in order. Of the large cities, with 100,000 population and over, Nashville had the highest rate from this disease, 53; followed by Fall River, 37.5; Memphis, 27.8; Louisville, 25.5; and Atlanta, 25.

Scarlet Fever.—Scarlet fever, with 5,243 deaths, or 8.8 per 100,000 population, was considerably less fatal than during the years 1908 to 1910, in which the death rates ranged from 11.4 to 11.9. The states reporting the highest mortality from scarlet fever in 1911 were Utah, 14.5 per 100,000 population; New York, 12.6; Rhode Island, 10.4; and Ohio, 10.3. Among the large cities, Cleveland had the highest death rate, 33; followed by St. Louis, 27.7; Syracuse, 26; Rochester, 22; and Chicago, 21.9.

Whooping Cough.—Of the three children's diseases—measles, scarlet fever, and whooping cough—the last mentioned caused more deaths during the period 1906 to 1910 than either of the others. For 1911 there were returned for the registration area 6,682 deaths, corresponding to a death rate of 11.3 per 100,000 population. The states showing the highest death rates from whooping cough in 1911 were Rhode Island, 21.7, and Kentucky, 19. The North Carolina municipalities had a high rate, 46.2; and of the cities of 100,000 population and over in 1910, the highest rates for 1911 were those of Nashville, 33.2; Richmond, 31.7; New Orleans, 28.1; Atlanta, 24.3; and Cambridge, 22.5—all except the last, southern cities with large negro population.

Diphtheria and Croup.—To some extent a children's disease, but with a wider range of age incidence than measles, scarlet fever, or whooping cough, diphtheria caused nearly twice as many deaths in 1911 as any of the other three. The death rate was 18.9 per 100,000 population, the lowest since the beginning of the series of annual reports in 1900. The rate for that year was 43.3, but it has fallen steadily, with only slight interruptions, until it is now less than one-half its height at the beginning of the last decade. Among the states with the highest death rates from diphtheria in 1911 were Pennsylvania, 27; Rhode Island, 25.6; Kentucky, 24.8; Utah, 22.1; and Connecticut, 21.9. The cities of 100,000 population and over having the highest mortality were Rochester, 41; Cambridge, 39.4; Chicago, 38.2; Detroit, 33.9; and St. Paul, 32.9.

Pellagra.—A large increase in the mortality from this disease was shown for 1911, 659 deaths being reported as having been caused by pellagra in the registration area during that year. During the early part of the decade, 1900 to 1909, the reported mortality from this disease was insignificant, two deaths being returned for 1900, two for 1903, and one for 1904. For 1908, 23 deaths were returned, all of which occurred in southern cities. A large increase was shown for 1909, during which 116 deaths were returned, and a still greater increase for 1910, when 368 deaths were reported as due to this disease. The mortality of 659 for 1911, as compared with 368 for 1910, indicates an increase of 79 per cent. It is questionable, however, if this should be considered as representative of the actual increase in the mortality. As in previous years the excess of deaths of females over those of males was very large, 464, or 70.4 per cent, of the deaths being of females.

Tuberculosis (all forms).—The total number of deaths from all forms of tuberculosis in the registration area during 1911 was 94,205, the death rate being 158.9 per 100,000—slightly lower than the rates for the preceding years, 160.3 and 160.8 for 1910 and 1909, respectively. The rates for the past three years are considerably lower than the annual averages for the quinquennial periods 1901 to 1905, 192.6; and 1906 to 1910, 168.7. There would appear to be a marked reduction in the death rate from this disease, although the rate for the past three years has remained practically unchanged.

The highest death rates from all forms of tuberculosis shown for the states in the registration area were those of Kentucky, 229.3; Colorado, 218; California, 206.8; Maryland, 203.3; and the lowest rates were those of Utah, 46.8; Michigan, 96; Wisconsin, 103.8; Washington, 106.7; and Montana, 107.1. The high death rate for the group of North Carolina municipalities, 256.8 per 100,000, was due to urban conditions and the large colored population.

The cities of 100,000 population and over in 1910 having the highest death rates from tuberculosis of all forms were Denver, 292.7; Los Angeles, 277.5; Albany, 269.4; Cincinnati, 265.3; and New Orleans, 260.5; while those with the lowest rates were Milwaukee, 106.5; Portland, Oreg., 106.8; Spokane, 109.4; Grand Rapids, 110.3; and Scranton, 112.7.

Cancer.—Cancer, which term includes malignant neoplasms of all kinds, caused 44,024 deaths in the registration area in 1911. The death rate, 74.3 per 100,000, was slightly lower than that for 1910, 76.2, but higher than that for any earlier year for which records are available. The highest crude death rate from cancer among the registration states was for Vermont, 101 per 100,000 population, a condition due to the relatively high age distribution of the population and the negligible amount of immigration. Other states with high rates were Maine, 98.6; New Hampshire, 96.8; Massachusetts, 94.4; and Rhode Island, 88, while the lowest rates are shown for Montana, 40; Kentucky, 42.7; Washington, 46.1; Utah, 51.9; and North Carolina municipalities, 54.8.

Among the cities of 100,000 population and over in 1910, in which many

deaths from cancer occur in hospitals of patients brought there for operation, those having the highest death rates from this disease were Albany, 122.8; Boston, 111.2; San Francisco, 110.6; Oakland, 105.3; and Cambridge, 104.1; those with the lowest rates were Memphis, 51.9; Seattle, 57.4; Atlanta, 61.2; Detroit, 65.1; and Jersey City, 65.5.

Acute Anterior Poliomyelitis (infantile paralysis).—There were 1,060 deaths from acute anterior poliomyelitis in the registration area during 1911 as compared with 1,459 in 1910 and 569 in 1909. Prior to 1909 this disease was not segregated from other diseases of the spinal cord. The death rate for 1911 was 1.8, a decrease from that of 1910, 2.7; but greater than that for 1909, 1.1.

Organic Diseases of the Heart.—Organic diseases of the heart caused more deaths, 83,525, than any other disease or group of diseases shown in the Abridged International List, although the number of deaths from tuberculosis of all forms, 94,205, was considerably greater. The death rate for 1911, 140.9, was slightly lower than that for the preceding year, 141.5, but the rate for each of these years was much higher than the rate for 1909, 129.7; and the rates for the quinquennial periods 1901 to 1905, 124.2; and 1906 to 1910, 133.2.

The mortality from heart disease is largely that of persons of middle and advanced age; hence the age distribution of population is an important factor in the rate. The states with the highest rates are: Vermont, 211.8; New Hampshire, 197; Massachusetts, 193.5; Maine, 179.8; and California, 178.7; while the lowest rates are shown for Montana, 80.8; Utah and Washington each 82.8; Kentucky, 86.5; and Colorado, 89.4. Among the large cities the highest rates were shown for Albany, 237.7; Worcester, 228.8; San Francisco, 227.9; Nashville, 220.8; and Washington, 214.5. The lowest rates are shown for Scranton, 93.9; Minneapolis, 95.1; Milwaukee, 95.6; Seattle, 96.9; and Spokane, 99.6.

Pneumonia (all forms).—The total number of deaths from pneumonia of all forms in the registration area in 1911 was 79,233, the death rate per 100,000 population being 133.7. The death rate of the white population, 128.4, was about one-half that of the colored, 252.2.

Among the death rates from pneumonia (all forms) in the registration states in 1911, the highest were those of New York, 177.8; Massachusetts, 153.8; Connecticut, 153.5; Rhode Island, 152.1; and New Jersey, 151.4; and the lowest those of Washington, 64.8; Wisconsin, 85.7; Montana, 90.2; Michigan, 90.4; and Minnesota, 96.1. The large cities showing the highest death rates from this cause were Atlanta, 227.8; Nashville, 222.6; New Haven, 212.1; New York, 209.6; and Pittsburgh, 207.2.

Diarrhea and Enteritis (under two years).—In 1911 there were, in the registration area, 45,868 deaths from this cause of infants under two years of age and 8,108 deaths of persons above this age limit. The death rate from diarrhea and enteritis (under two years) was 77.4 per 100,000 population of all ages, a rate nearly one-fourth lower than that for the preceding year, 100.8, and lower than that shown for any previous year since the annual mortality reports were instituted.

Suicide.—The total number of deaths from suicide in the registration area for 1911 was 9,622, an increase of 1,032 over the preceding year. The death rate, however, increased only from 16 to 16.2 per 100,000 and was lower than that for 1909, 16.5; or 1908, 17.8. There is a tendency to apparent increase in the death rate from suicide.

The death rate of the white population in the registration area from suicide, 16.5, was higher than that of the colored population, 10.3. Among the registration states, the highest death rates from this cause were in California, 30.1; Montana, 27.8; Colorado, 21.7; Washington, 20.7; and Vermont, 20.1; and among the cities of 100,000 population and over San Francisco, 39.4; St. Louis, 37.7; Los Angeles, 37.2; Denver, 35.6; and Oakland, 35.1.

Violent Deaths (excluding suicide).—Of the total number of deaths in the registration area in 1911 classified in this group, 54,028, more than nine-tenths, 50,121, were of an accidental or undefined character, the remainder being due to homicide. The death rate from accidental and unspecified violence was 84.6 per 100,000 population, which is slightly higher than the rate for the preceding year, 84.3; but lower than the averages for the consecutive periods 1901 to 1905, 84.9; and 1906 to 1910, 86. Homicide was reported as the cause of 3,907 deaths in 1911, the rate being 6.6 per 100,000 population.

Of the death rates from violence (exclusive of suicide) shown for the registration states, the highest were those of Montana, 126.9; California, 110.5; Pennsylvania, 106.2; Colorado, 102.2; and Washington, 96. The cities of 100,000 population and over having the highest rates were: Memphis, 191.7; Scranton, 177.3; Birmingham, 151.9; Albany, 131.7; and Boston, 125.3. The lowest rates among the states were in Wisconsin, 64.3; Minnesota, 70.6; and Missouri, 74.6; and among the cities, Fall River, 46.5; Grand Rapids, 54.3; and St. Paul, 58.

PERSONALS.—Dr. LEO F. ADT (A. M. C. '92) has removed from 174 Washington Avenue to 1 Elk Street, Albany, N. Y.

—Dr. JOSEPH M. A'HEARN (A. M. C. '11) is now located at 60 State Street, Saratoga, N. Y.

—Dr. MICHAEL A. ROGERS (A. M. C. '12) is engaged in active practice at Greenwich, N. Y.

DIED.—Dr. CHARLES DICKINSON (A. M. C. '60) of Cobleskill, N. Y., a member of the Schoharie County Medical Society, died at his home, April 29, 1913, from apoplexy, aged 80.

—Dr. FRANK A. SHORTLEFF (A. M. C. '64) for more than forty years a member of the school committee of Somerset, Mass., died at his home April 9, from senile gangrene, aged 75.

—Dr. EDWARD W. CARHART (A. M. C. '78) died at his home in Brooklyn, N. Y., May 15, 1913.

—Dr. ARTHUR CAPRON (A. M. C. '86) of Albany, N. Y., a member of

the American Medical Association, died suddenly in that city on April 22, from heart disease, aged 63.

—Dr. EVERETT E. TRACY (A. M. C. '91) a member of the Illinois State Medical Society and Association of Military Surgeons of the United States, Captain M. C. Illinois National Guards, died at his home in Columbia, Pa., April 18, from pulmonary tuberculosis, aged 36.

In Memoriam

CHARLES DICKINSON, M. D.

Dr. CHARLES DICKINSON, for fifty years an active practicing physician, passed away at the home of his daughter, Mrs. Clarence H. Shafer, in Cobleskill, N. Y., Tuesday, April 29, 1913, following a stroke of apoplexy.

Charles Dickinson was the son of Lyman and Harriet A. (Webster) Dickinson, and was born in Henrietta, Monroe county, May 31, 1833. He was a descendant of early New England colonists, the first ancestor of this branch having come from England and settled in the Connecticut valley about 1640.

He received his education in the common schools and later attended the academy at Cherry Valley. He began the study of medicine with Dr. James E. Sutphen of Seward, and subsequently took three courses of lectures at the Albany Medical College, graduating from that institution in 1860. He located at Seward, where he practiced his profession for nine years, when he removed to Binghamton, where he remained for eighteen months and again took up his residence in Seward. Here he continued to reside until three years before his death, when advancing years compelled him to give up active practice and he took up his residence with his daughter in Cobleskill.

During early and middle life, Dr. Dickinson had a large practice, covering a wide circle in his ministrations. A student always, he gave attention not simply to medical subjects, but to science and literature as well. He frequently lectured on scientific and literary subjects, and published some interesting letters of travel written in 1896, while making a tour of Europe for pleasure and study.

In politics Dr. Dickinson was a Democrat, and he had held a number of important offices, performing all work entrusted to him faithfully and well. As justice of the peace he transacted a large amount of important business and as railroad commissioner he rendered valuable service. He was a leading member of the Methodist Church and was for many years a dearly loved Sunday School teacher. At one time he was a member of the F. and A. M. Lodge of Cobleskill.

Dr. Dickinson married in 1859 Miss Celia M. France, daughter of Mr. and Mrs. Gilbert G. France, who died at the early age of thirty-eight, leaving three children: Everett M., a stockbroker of Holyoke, Mass.; Dr. Melville D., a leading physician of Troy, and Mrs. Clarence H. Shafer of Cobleskill.

FRANKLIN A. SHURTLEFF, M. D.

Dr. FRANKLIN A. SHURTLEFF, for nearly half a century a resident and physician of Somerset, Mass., died at his home in that town on April 9, 1913. He was in his seventy-sixth year. Dr. Shurtleff was ill about six weeks, gangrene developed, and he had been confined to his bed for practically all of that time. He was a great sufferer, but bore his pain with much fortitude.

Dr. Franklin Atwood Shurtleff was the son of Seth and Mercy (Gibbs) Shurtleff and was born in Carver, Mass., July 13, 1837. His early life was spent in that town, where he attended the public schools, and was later a student at the Pierce Academy Middleboro. Finishing his course there he next took up his studies at Oberlin College, Ohio, and from there went to the Albany Medical College, graduating December 3, 1864.

During the winter he located in Somerset, where he continued to practice until just prior to his last illness, when he made arrangements for the transfer of his practice. When Dr. Shurtleff located in Somerset there was no physician in town, and the townspeople were attended by the late Dr. Talbot of Dighton and Dr. Wellington of Swansea. He soon succeeded in picking up a very large practice, a greater part of which he held until very recent years. As a physician he was very successful and had the confidence of the entire community of Somerset and the respect of his brother physicians.

Shortly after his arrival in Somerset, Dr. Shurtleff was prevailed upon to accept the position of school committeeman, and in the spring of 1871 was elected as a member of that board. His success in this office was as marked as was that as a physician. He had seen the schools grow from the old-fashioned, ungraded schools up to the present system. The high school was started under his administration, and the entire school system has been so completely improved that it would be hard to compare it with that of forty years ago.

He held this position up to the last election, at which time he refused to be a candidate for re-election, apparently realizing the amount of work that would fall upon him during his declining years. He knew the work required so well that his loss will be keenly felt by the town, as it was his policy to make the town's money go as far as possible, and to see that the best results were obtained. For some time he had been a strong advocate of increased pay for the teachers, in order that Somerset might secure as good instructors as any town or city.

He was an ardent church worker and for years was a deacon of the Baptist church before its federation with the Congregational church, and held a similar honor in the Federated church. He was one of the pillars of the church, and from him advice was sought on any question of importance pertaining to the church life. He was also superintendent of the Federated Sunday school. He was in charge of the Sunday school work at the Baptist church before the federation, and was considered an authority on the Bible and Sunday school work

throughout the state, and was a director of the Massachusetts Baptist Sunday School Association.

During the Civil War he was drafted as a surgeon of the army, but as he had two brothers already at the front his people prevailed upon him to remain at home.

For years he was school physician for both Somerset and Swansea, and had been agent of the local board of health in his home town for many years.

His first wife was Miss Abbie Davis of Somerset and to them two children were born, Dr. Fred Shurtleff of Los Angeles, Cal., with whom the doctor and his daughter spent the winter three years ago, and Frank, of Boston. Martha Godfrey of Norton was his second wife, and to them two children were born, a boy, who died in infancy, and a daughter, Miss Carrie Atwood Shurtleff of Somerset, who is a teacher in the public schools of Taunton. He leaves three brothers, Dr. James of Middleboro; Micah of Raynham, and Myles of Weymouth; and one sister, Mrs. Mercy Wordell, of East Providence; besides a number of grandchildren and relatives.

One fact that was very noticeable in the life of the physician was that with all his busy moments as a physician and public servant, he always found time to attend to his church duties, and could be counted upon as one of the "faithful ones" unless detained by sickness or an unusual case of illness among his patients.

The church and its branches, the public schools, relatives, professional clients, and in fact, the entire town of Somerset, fully realize that they have met with an irreparable loss; one that will be hard to fill, and to the bereaved family has been extended the deep sympathy of the entire community.

Versatility, ruggedness, sympathy, rigid integrity and deep Christian piety marked the man.

EDWARD WILLIAM CARHART, M. D.

Dr. EDWARD WILLIAM CARHART, a well-known physician of Brooklyn, died May, 1913, at his home, 150 Hooper Street, of kidney disease. He had been ailing for some time and although everything possible known to medical science was resorted to to prolong his life, he gradually sank until he passed away. Funeral services were held under the auspices of Merchants Lodge, F. and A. M., of which he was chaplain. The interment was in the Carhart family plot in Cedar Hill Cemetery, Newburgh, N. Y.

Dr. Carhart was born in Dutchess County, N. Y., and was fifty-seven years old. He received his training which fitted him for the medical profession in the Albany Medical College, from which he graduated in 1878. For fifteen years he practiced medicine at Milton, N. Y., and twenty-five years ago he moved to Brooklyn, taking up his residence at

273 Keap Street. Three years ago he moved to the Hooper Street address, where he died. He is survived by his widow and one son, Oscar Carhart. Dr. Carhart was a member of the Medical Society of Kings County, the Dutchess County Medical Society, Merchants Lodge, F. and A. M., Long Island Grata, and the Foresters of America.

EVERET E. TRACY, M. D.

Dr. EVERET E. TRACY was born at Albany, N. Y., April 11, 1870, and died at Prairie View April 9, 1913, having reached the age of forty-two years, eleven months and twenty-nine days.

Upon graduation from the Albany Medical College, in 1891, Dr. Tracy practiced for a time at Youngstown, O., and later went to Chicago where he was active in a number of medical organizations. He was for a number of years medical examiner for the State Board of Health, later being appointed physician in charge of the Illinois State Penitentiary at Joliet. In the year 1901 Dr. Tracy was commissioned captain assistant surgeon on the staff of the artillery battalion of the state under Surgeon General N. Senn. In 1904 he was appointed lieutenant past assistant surgeon of the Illinois Naval Reserve. Two years later he began his practice at Prairie View in which he continued until, on account of illness he was obliged to give it up.

During this period of sickness which extended over a number of months, Dr. Tracy manifested a very hopeful spirit and in spite of his weakened physical condition, which he could not help but observe, he was continually planning for the time when he would again be able to resume his labors as a physician. But in the midst of all this the Master of the universe said, "It is enough," and the soul took its flight to the eternal realms. His spirit is entrusted to the good Father and we know that He, who is too wise to err and too good to be unkind, will do all things well.

Those who mourn this early departure are Dr. Tracy's mother, one sister, one brother, his wife and son Everet and a multitude of sympathizing friends.

AUGUST J. FREUTEL, M. D.

Dr. AUGUST J. FREUTEL died at his home, 533 Bergen Avenue, New York City, April 29, 1913. Dr. Freutel was born in the Borough of the Bronx, New York City, November 27, 1876. He graduated from Public School No. 85 and entered Bellevue Hospital Medical College in New York. He entered the Albany Medical College in the fall of 1901 and was graduated with the class of 1902.

After graduation he served as an interne in the Fordham Hospital and in the Mothers' and Babies' Hospital of New York. After his internship,

Freutel started practice in the Borough of the Bronx and through close application to business, established a colossal practice in the neighborhood in which his family held a position of affluence for many years. He became a director of the Bronx National Bank, and was made master of the Wiegand Lodge, F. and A. M. He was non-partisan in politics and never sought political office or appointment. He lent his influence to all issues beneficial to his vicinity. He worked unceasingly in the interest of the Bronx County Bill, which passed the last session of the legislature. At the time of his death Dr. Freutel was a member of the American Medical Association, the Bronx Medical Association, was examiner for the Masonic Life Association of West New York, and the Maccabees of the World. He was a member of the Dutch Reformed Church and many local organizations.

A large and representative throng of mourners filled the entire block to pay their last tribute to the memory of Dr. Freutel, on Friday afternoon, May 2, when his remains were taken from his late home. Interment was in Woodlawn Cemetery, where the Masonic rites for the dead were executed, and then was laid to rest a man who had been unceasing in his devotion to a great profession and to his fellow man!

H. M. C.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Napoleon's Campaign in Russia Anno 1812. By Dr. A. Rose. Published by the Author: 173 Lexington Ave., New York, 1913.

An unusual and interesting book is this one of Dr. Rose's dealing with Napoleon's fatal campaign of 1812. Dr. Rose has shown great skill and discrimination in collecting his references, which in this case must be especially difficult to discover on account of their rarity. Naturally in an expedition where there was such suffering and such danger there could hardly be many records kept. The great criticism that might be made of the book is that it is too brief, that it jumbles up anecdote and medicine in too limited a space. Thus we are rushed from an account of splendid heroism to a diagnosis of the soldiers' digestions in the same paragraph, with somewhat jarring haste. Dr. Rose has not tried to do more than simply sketch the events of the return from Moscow, but this is enough to make us realize its great tragedy. For instance, the barest recountal of some of the episodes at Beresina can not but thrill us. Or when we read of some of the captive Frenchmen: "Two Russian peasant soldiers would then take hold one at each leg, and drag the dying man with the head over the snow and stones until he was dead, then leave the corpse in the middle of the road." No rhetoric is needed here to stir us. Altogether we are obliged to Dr. Rose for presenting a book, which must be interesting and instructive to either physician or layman.

J. C. M.

Men, Manners and Medicine. By MEDICUS PEREGRINUS, Author of "Litora Alienæ," "Maners Makyth Man." Boston: W. M. Leonard, 1913.

The anonymous author of this well printed volume has indulged his literary fancies in a series of essays, inspired by his vacation travels. These have appeared from time to time in the *Boston Medical and Surgical Journal*. They are not strictly medical, but present the impressions of a physician as he mets from time to time some of the suggestive and inspiring conditions of the historical Old World. They are particularly rich in their reflections of life and institutions in England.

OPHTHALMOLOGY

Details of vision of 132 cases of Intracapsular Extraction of Cataract. LIEUT. COL. H. SMITH. *The Indian Medical Gazette, September, 1912.*

The author of this paper gives details of the vision of 119 cases in addition to the 13 previously recorded (*Indian Med. Gazette*, July, 1910). He is led to this on account of a paper by Eason in the *Lancet* last year, in which the results obtained by Treacher Collins' capsulotomy method, Higgens' simple extraction and those famous twenty-three cases recorded by Kilkelly and Pontin were compared.

The fresh 119 cases were all selected by Smith as normal in every respect except for the presence of the cataract and were operated on by himself. The vision was tested by himself or his wife with a diaphragm behind the lens, from ten to twenty-one days after the operation. Those patients who were unable to read were tested with the target dot test, and for near vision with the threading of a cambric needle. It is noted that those recorded as threading a needle with difficulty were mostly aged people with shaky hands who had not been accustomed to use needles.

Operative complications were practically none, and in only one case was the capsule left behind. Two cases were so stupid that vision could not be recorded.

The near vision Jaeger 1, 10 cases; thread needle with ease, 14; thread needle, 84; thread needle with difficulty, 9.

Col. Smith says that threading needles is a more exacting test than Jaeger 1 as it requires the use of more senses than one. It is by no means easy to think of any simpler test that would be as satisfactory. Col. Smith is to be congratulated on the success of his operation in his own hands. It is not easy, however, to see why the visual results alone should be so much superior to those obtained by the ordinary methods when there has been no surgical complication and when there is a clear gap in the capsule. Col. Smith distinctly states that in carrying out these tests only spherical lenses were used, and as the tests were all carried out within a month of the operation his operation must also be credited with causing no astigmatism in the majority of cases, for we all know that an aphakic eye will not read even 6/9 with more than 1 D of

astigmatism uncorrected, to say nothing of the 6/3 he mentions in a later part of the paper as being obtained in some later cases.

He concludes by advising those operators outside India who have not had a special course of training in the manipulative art connected with it, or the operator who has not had such training and whose experience is limited to a hundred cataracts a year or less, to avoid this operation, and predicting that cataract extraction will become a specialty within the specialty of ophthalmology, and that it will be limited to a few men.

The Results of Trephining for Glaucoma by Elliot's Method. (Ueber die Erfolge der Glaukomtrepanation nach Elliot.)

W. STOCK. *Klinische Monatsblatt fuer Augenheilkunde*, October, 1912.

During the last year before the publication of this paper, Prof. Stock, of Jena, had trephined in all cases of glaucoma. This article states the results of that experience and his conclusions for them. Twenty eyes were operated in the cases of fifteen patients suffering from chronic glaucoma. The vision of eight was improved, that of two was lessened and it remained unchanged in half of all the operated eyes. A previous iridectomy had failed in some of these cases. In two of the eyes, lenticular opacity was progressive. In sixteen of them the diminution of tension, by the operation, was permanent. Ten of the eyes were emmetropic, seven hyperopic and three myopic. In eyes that were nearly blind the results were so poor that the author concluded that such eyes ought not to be operated, even by this method.

The same operation had been done on twenty-two eyes affected by inflammatory glaucoma; in one-half of these the acuteness of vision remained the same, after the operation, as before it was done; in eight it was improved and was reduced in four. Sixteen of these had been emmetropic, five hyperopic and one myopic.

During the relatively short period of observation (one year or less) the tension, in the large majority of the eyes, had remained below 20 mm. of mercury.

The only change that the author made in Elliot's operation was to use a trephine of 1.5 mm. diameter and to make the incision half in the cornea and half in the sclerotic. Thus he always got some protrusion of the iris, which he snipt away, with scissors. Iritis somewhat commonly complicated the healing but, after he began to use atropine from the second day, as routine treatment, no synechiae resulted.

If the incision were too peripheral, protrusion of the iris did not occur. In such a case Stock advises waiting eight days and then repeating the operation. Whenever there occurs hemorrhage into the anterior chamber, the healing is expedited by stroking out the blood. He adversely criticizes Gibbert's views as to the impropriety of reducing the tension in chronic glaucoma and shows that if this were contraindicated in chronic glaucoma, it would necessarily be even more so in cases of higher tension.

He thinks that cases in which no abnormally increased tension can be found, by repeated and careful tonometric mensuration, are really cases of optic nerve disease in which the glaucomatous cap is seeming, rather than real.

The author's conclusions, about the operation in question are:

1. Increased tension is the cause of cupping and loss of sight.
2. Diminution of abnormally high tension is always indicated.
3. Every case of primary glaucoma, attended by increased tension, ought to be operated.
4. Elliot's trephining is the best operation that can be performed, generally.
5. Elliot's trephining is, in every case, a fit substitute for simple iridectomy.
6. This trephining is easier to do and less dangerous than any other glaucoma operation.
7. In some cases, no operation should be risked. Among such are those of old people whose tension can be kept down by the use of miotics. Also those in which there is comparatively slight increase of tension and very small visual fields.
8. The earlier the operation is done the more favorable is the prognosis.
9. The freer an operation is from risk, the earlier it may be done and the operation in question is least risky of all.

Researches on a Serum-reaction in Sympathetic Ophthalmia. (Versuche einer Serumreaktion der sympathische Ophthalmie.)

R. KUEMMELL. *Von Graef's Archiv fuer Ophthalmologie*, Vol. 81, part 3.

The nature and etiology of sympathetic ophthalmia is still one of the dark places in ophthalmology in spite of much recent work on the subject. The author of this paper, who shares Elschnig's views as to the affection being not of a bacterial but of a anaphylactic nature, has undertaken some researches after a specific serum reaction, which, if his views are correct, should be obtainable.

He does not go at any great length into the details of his method of examination, as these have been already published (*Münch. med. Wochenschr.*, Nr. 32, 1911; *Zeitschr. f. Immunitätsforsch.*, vol. 6, pt. 1, p. 144, and vol. 11, pt. 6, p. 749). Ox uvea was used as an antigen since both Elschnig and the author had found this to display a conspicuous amount of organ specificity, but since there is no soluble albumen in the uvea, it was necessary by prolonged and gentle hydrolysis to bring the specific substance into solution. Any powerful hydrolysis was found to destroy the antigen character of the solution. The difficulty of producing a satisfactory standard solution is always likely to be a source of error.

The author gives the history and serum curves of thirteen cases of sympathetic ophthalmia with the following results: The amount of

positive precipitation is in all the cases only slight and in no way comparable to that found in such diseases as diphtheria, but this is scarcely to be wondered at when the small space afforded by the eye for the development of antibodies is taken into consideration. In all of the thirteen cases a positive reaction occurred in seven, whereas in thirty control cases a positive reaction only occurred in three.

The author admits that the number of cases is too few to base any theory on, but considers his results as an encouragement to further research on the subject. He intends to work first at the problem of getting satisfactory standard solutions of antigen.

SURGICAL PATHOLOGY

Edited by George E. Beilby, M. D.

The Effect of Scarlet Red on Defects in the Mucus Membrane of the Stomach. An Experimental Study.

JOHN STAIGE DAVIS and CLINTON D. DEMING. *Bulletin of the Johns Hopkins Hospital, Vol. XXIII, No. 261 page 332, November, 1912.*

While using scarlet red in the treatment of ulcers, of varying etiology, on the skin and on mucous membranes, it occurred to the authors that possibly ulcers of the alimentary tract, especially ulcers of the stomach, might be benefited by the use of scarlet red, if it could be brought into contact with the ulcerated surface. Before attempting to administer this substance to patients suffering with gastric ulcer some experimental work on animals was undertaken which was followed by a number of operative experiments. They first investigated the toxicity of the substance when given internally in order to familiarize themselves with its effect on the general health of the animals in regard to weight, excretions, hemoglobin, etc. These experiments were carried out mostly on dogs. The animals were given doses of varying sizes and over periods of two or three months. In some instances the scarlet red was administered in olive oil and in others the powder was administered in capsules.

These experiments led the authors to believe that internal administration of scarlet red, either in oil solution or as dry powder, has no toxic effect, either on the economy as a whole, or on any special organ. There was no purgative action, and the urine was unchanged. There was no abnormal stimulation of the mucosa anywhere in the alimentary tract. The mucous membranes of the bladder and gall bladder were unaffected. Microscopic examination of the various organs and tissues showed no change which could in any way be traced to the dyestuff.

Experiments were also undertaken to determine the toxic effect of scarlet red in the lax subcutaneous tissue and in the peritoneal cavity. Here likewise no untoward symptoms were observed. Small quantities of scarlet red oil injected intraperitoneally were encysted as any other foreign body. When larger quantities of the oil or oil emulsion were injected a general peritonitis followed. There was only local staining of the fat which came in contact with the oil. This material acted in

the abdominal cavity as any other non-absorbable irritating powder would, and had no specific toxic effect.

After these preliminary experiments the authors concluded that the toxicity of the dyestuff used was a negligible quantity, and felt justified in proceeding with the operative experiments. The stomach was chosen as the site of the operative defects on account of its accessibility and also because of the prevalence of ulcers in this organ.

Fifteen sets of experiments were done on thirty dogs. Under ether anesthesia a small portion of the mucosa was excised quite close to the pylorus, in each instance as near as possible in the same situation and of the same depth. Their experiments may be divided into three groups. First, those fed with the oil solution of scarlet red. Second, those fed with olive oil without scarlet red. Third, those fed with dry powder.

Those fed with olive oil alone acted as a control on the other two groups. Briefly, the author has found that in group 1, (fed with scarlet red oil solution) the defects made artificially in the feeders were further advanced toward healing than in corresponding controls in four out of five instances. In group 2, (fed with pure olive oil) similar defects in feeders were further advanced than in corresponding controls in three out of five instances. In comparing the advancement of the healing in the feeders in the duplicate experiments in these two groups, they found that the epithelial stimulation was more marked in those animals fed with the scarlet red oil solution than in those fed with pure olive oil. In group 3 (fed with dry powder), similar defects in feeders were further advanced toward healing than in corresponding controls in only two out of five instances.

In conclusion the authors state their belief that the dyestuff used in this series of experiments is not toxic and apparently has no deleterious effect on either dogs or rabbits.

When given by mouth it is a fat selecting vital stain. In the course of months the stain is gradually eliminated.

Subcutaneous and intraperitoneal injections stain only the fat in actual contact with the scarlet red oil solution.

It is difficult to say from these few operative experiments whether the scarlet red has, or has not, a definite stimulating action on the epithelium of defects in the gastric mucosa. However, the scarlet red oil solution caused a more rapid and better developed growth of epithelium in the group in which it was used, than occurred in the duplicate group where plain olive oil was used.

The results with dry powder were not so favorable experimentally, but this may have been due to the fact that the material was not continuously in contact with the denuded area.

They were unable to determine the relative effect of the scarlet red on chronic gastric ulcers, as it was impossible to produce chronic ulcers in dogs with controls of exactly the same size.

Their experiments are suggestive, and, as this dyestuff may be safely administered they feel that it is worthy of a thorough clinical trial.

ALBANY MEDICAL ANNALS

Original Communications

BENZOL IN THE TREATMENT OF LEUKAEMIA,
WITH RESULTS IN A CASE OF MYELOID FORM.

By JEROME MEYERS, M. D.

AND
THOMAS JENKINS, M. D.

The recent brilliant institution by Korányi¹ of benzol in the therapy of leukaemia is based upon the clinical observations of three cases of benzol poisoning in the Johns Hopkins Hospital and upon the animal researches by Selling on the effects of benzol. The cases of benzol poisoning,² two of which died, showed symptoms of purpura haemorrhagica with typical manifestations in the skin and mucous membranes, and a blood picture similar to aplastic anaemia, in which the most striking finding was a marked leucopenia. This diminution of white cells in the circulating blood was evidenced in one fatal case by a count of 1,280 per c.cm. at admittance, and 480 at death a week later, in the other fatal case the first count was 560, falling to 140 at exitus. With this leucopenia there was a distinct anaemia of 640,000 and 1,500,000 with 8 and 15% of haemoglobin (Sahli) respectively. Microscopically there was little change in the reds, no myelocytes, and only one megaloblast. The animal experimentation of Selling³ shows that benzol is a very powerful leucotoxin, destroying not only the white cells of the circulating blood, but attacking the parenchyma-cells of the entire blood-forming system, so that on repeated injections of benzol, the bone-marrow, the spleen, the lymph-glands, and the lymph-follicles are rendered aplastic or atrophic, regeneration occurring with the cessation of the poison; that myeloid tissue is more affected than lymphoid, causing a greater destruction of polynuclear cells than lymphocytes, that the erythroblastic tissue of the bone-marrow is disturbed, but that the circu-

lating red-cells are not greatly injured. There is at first a hyperleucocytosis followed by a leucopenia. The aplastic blood organs regenerate completely in from 10-21 days. The liver and kidneys show varying grades of fatty change; in some animals there were haemorrhages in the wall of the stomach, and intestine, and lung.

Korányi in his original article reported two cases with his conclusions based on these and seven other cases reported later by Kiralyfi. He sums up his experience as follows:

(1) After an initial rise in the leucocytes, there is a decrease at the end of the second or beginning of the third week, at first slow, then rapid. The red cells are little affected, and may be higher at the end of treatment. All forms of leukaemia are benefited. The spleen is markedly decreased in size late in treatment. The general condition is markedly benefited.

(2) The action of benzol is slower than X-Ray, but may be of benefit when X-Ray has failed. Patients with previous X-Ray treatment seem to react better to benzol than those without. The results of benzol seem to be transitory.

(3) Small doses stimulate the bone-marrow; so give as large doses as possible, that is, $\frac{3}{4}$ gr, daily, in capsules of 0.5 g. each with equal quantity of olive oil. There are few bad effects outside of initial dizziness, ringing in the ears, eructation, or pyrosis.

Korányi's first report showed a case in which previous use of X-Rays had failed to diminish the whites. With benzol, the whites dropped from 173,000 to 12,000 in 78 days, and finally to 8,000, at which level the whites remained six weeks later. The patient felt better, the spleen, at first hardly diminished, grew rapidly smaller, the reds rose from 3,000,000 to 4,000,000, and even, with cessation of treatment, the patient was able to work.

With these favorable findings in mind, we decided to try the effect of benzol on a freshly diagnosed case of myeloid leukaemia, the patient receiving no other treatment of any kind. The case is as follows:

Mr. F. C., aged 41, a fuller by occupation, first seen September 7, 1912, stating he had been ill for a long time. His only previous illness was typhoid six years ago, since when he has never been well. Has

always had trouble with his stomach and bowels. At present, he complains of fulness after eating, cramps in the bowels, relieved by defecation, occasional diarrhoea, with incontinence of feces and urine. He suffers from dyspnoea and palpitation, and it is only by main grit that he is able to keep at work.

Status Praesens, September 7. The patient is tall and spare but not thin, weighs 145 pounds, very pale, eyes prominent, partially bald, with visible temporal vessels. No enlarged lymph glands. Chest negative, except one rib on either side seemed to be enlarged.

Examination of the abdomen revealed an enlarged and tender spleen, extending a hand's breadth beyond the border of the ribs. No increase in size of the liver, no ascites, no oedema. Te. 99°. Pulse 90. Systolic blood-pressure 105.

Urine pale, Spec. Grav. 1008, normal. The feces were alkaline, meat was not well digested, there was a reaction with benzidin, no starch-cells, numerous ammonium-magnesium phosphate crystals, some acid-fast organisms, not tubercle-bacilli, and a large number of what were first considered pus corpuscles, but later proved to be the various white elements of the blood.

The blood count gave 4,000,000 reds, 30% haemoglobin, and 212,000 whites, of which 52% were neutrophiles, 38% eosinophiles, 3.5% basophiles, 6.6% small lymphocytes, 10.2% large, 3.8% transitionals, and 20% myelocytes.

On September 13, the patient was started on benzol, two capsules, each containing 0.5 g. benzol and oil of sweet almonds, four times a day. After a few days, diarrhoea and tinnitus aurium developed, which necessitated its discontinuance for two days, after which the benzol was again taken, and taken continuously, in an aggregate daily dose of 4 g. for 174 days.

September 19, the white count was 350,000, a rise, in accordance with the findings of Selling and Korányi. The patient felt better, however. September 25, the leucocytes numbered 140,000, the reds 3,600,000. The differential count showed 60% of neutrophiles, 1.5% eosinophiles, 3% basophiles, 3% small lymphocytes, 17% large, 15.3% myelocytes. There were nucleated reds. Patient continued to feel well, gained strength, and could walk better.

October 2, 1912,	Leucocytes.....	244,000
October 10, 1912,	Leucocytes.....	277,000
October 17, 1912,	Leucocytes.....	247,000
October 24, 1912,	Leucocytes.....	290,000

All during October there was an increased leucocytosis, but the patient continued to improve subjectively; he could walk with less dyspnoea and weakness, he worked full-time and even overtime, he gained five pounds, and the improvement in his complexion was apparent to himself and his wife. The spleen is less tender, but little decreased in size.

November 6, 1912, Leucocytes, 254,000
 November 8, 1912, Leucocytes, 179,200

November	30, 1912,	Leucocytes, 250,000
December	6, 1912,	Leucocytes, 218,000, Reds, 4,304,000
December	19, 1912,	Leucocytes, 221,000, Reds, 3,500,000
January	31, 1913,	Leucocytes, 308,000
February	28, 1913,	Leucocytes, 450,000, Reds, 3,900,000

On February 28th, the haemoglobin was 60 (Sahli) and the differential neutrophiles 74%, small lymphocytes, many of which were filled with coarse basophilic granules, 9%, large 2%, myelocytes 13%, basophiles 1%, eosinophiles 1%, mononuclears 1%.

Benzol was now stopped for three weeks, during which period, there was a loss of three pounds and loss of sense of well-being. April 4, the whites numbered 443,000, reds 4,212,000, Hg. 55% (Sahli); benzol was again given, and on April 11, the whites numbered 350,000, of which 50% were neutrophiles, 42% myelocytes, 4% basophiles, 1% eosinophiles, 2% small, 2% large lymphocytes, and 1% transitional. On April 18, the count was 313,000 with 65% neutrophiles, 24% myelocytes, 2% eosinophiles, 2% basophiles, 4% small, 2% large lymphocytes, and 1% transitionals. The patient felt better when taking the benzol.

The patient had then, up to April 18th, taken benzol for 174 days with no evidence of poisoning. The last white count was 313,000, the original 212,000; at no time did the leucocytes even approximate a normal level. The lowest count, 140,000, was reached after only twelve days of benzol. Recently, even with the use of benzol, there has been a rise in the leucocytes. However, with the renewal of benzol after a three-weeks' pause, there was a fall from 443,000 to 350,000 during a week. Myelocytes have persisted, and even in larger percentages than in the early counts. The spleen, though not as tender, has not markedly decreased in size. Yet in spite of all these failures in the effect of benzol, the patient has been strikingly benefited as far as his subjective symptoms are concerned; he has grown stronger, gained five pounds, has worked even overtime, lost his dyspnoea, shows a distinct improvement in his red cells and haemoglobin, and even with a rising white count, was not as comfortable without benzol as he was with it.

The paradoxical actions of benzol are evident from the cases reported. Kiralyfi,⁴ in his series of cases, had three show marked diminution of the whites to normal with a spleen still palpable and persistent myelocytes. One case of lymphatic type showed a normal count, but the lymphocytes still remained at 63.3%. One myeloid case with much glandular involvement, in

which X-Rays caused a leucocytic increase, was brought from 208,000 to 65,000 in three weeks by benzol, but further use was attended by a rise. Another case gave at first a slight decrease, and then a rise from 110,000 to 290,000. Kiralyfi, as do others, notes that fever rapidly disappears on the administration of benzol.

Wachtel⁵ in one case had to stop benzol on account of a resultant albuminuria. In a second case, in which arsenic injections had been of no benefit, benzol brought the whites to 8,000, increased the reds, destroyed the fever and rendered the spleen just palpable, but the myelocytes remained at 2%.

Stein⁶ reports one case, with no great relief with X-Rays, in which, with benzol, the whites fell to 9,000 in 42 days, the myelocytes were still 11.4% and the spleen palpable. He believes it is well to follow benzol with a course of arsenic.

Billings⁷ reports five cases, all of which had X-Rays at some time. One, a case of second relapse, in which the whites fell to 3,600 with no myelocytes. A lymphatic case with a fall to 40,000. A myeloid with a fall to 9,800 with 1% of myelocytes. A fourth case, in which X-Rays were employed three times weekly with benzol, fell to 8,500 with a normal differential count and a just palpable spleen. A fifth lymphatic case that fell to 5,900 with some increase of the lymphocytes and an enlarged spleen. He speaks of a basophilic granular degeneration of lymphocytes, a condition we found in some smears.

Neumann⁸ reports a case in which the ordinary dosage of benzol was used. The patient felt better, the spleen decreased, at the end of thirty-six days' treatment, the whites numbered 5,300, and the patient considered herself well. But, even after stopping the benzol, the whites continued to fall, reaching the number of 200 per com., then developed weakness, fever, diarrhoea, repeated copious nasal bleedings, haemorrhagis, stomatitis and rhinitis, with death thirty-nine days after stopping benzol.

Tedesco⁹ had a favorable result, in a lymphatic case, the whites falling from 120,000 to 11,000, the reds rising from 975,000 to 3,770,000 with subjective improvement.

Klein¹⁰ has treated twenty-two cases with benzol, twelve of which he reports in detail. One case of myeloblastic form died, with no benefit from either X-Rays or benzol. Another myeloid,

in which 54 X-Ray treatments brought the whites from 250,000 to 19,520, was brought by benzol to 12,440 in six weeks; two weeks after stopping benzol, the whites numbered 9,920, five weeks after 10,180; there is still a small percentage of myelocytes, the spleen is hardly palpable and the patient is in excellent subjective health. One case of myeloid that fell from 204,800 to 84,600 after 33 X-Ray treatments, relapsed, and after forty-three benzol injections of 1.5 g. fell from 142,800 to 78,800, with little improvement. Another case of myeloid, in which the whites fell from 972,800 to 597,000 in 25 days, only to show a sudden rise to 750,400 at the thirty-seventh day, falling to 388,000 on the forty-seventh, but never dropping below 340,000, even though the benzol was given as often as ten times daily in subcutaneous doses of 15 drops for eight days. A further myeloid case, treated for 154 days with enormous doses of benzol by mouth and hypodermatically fell from 598,200 to 190,800, the general condition was good, the spleen and liver almost normal, but a marked anaemia, and a varying white count that never fell near normal persisted, a paradoxical effect, such as is seen in our case. Another case of myeloid that fell from 94,600 to 48,900 in fifteen days after ten X-Ray treatments, then with benzol and later with X-Ray in combination, to 4,600 in about two months. The spleen is hardly palpable, the liver very much smaller, and the differential blood picture normal, a case similar to those reported by Billings, in which, with combined treatment, he obtained normal numerical and differential values. Another myeloid case, the first count 210,800, falling to 69,000 on the forty-seventh day, and then in five days suddenly rising to 103,800 with very slow diminution in the size of the spleen, but with marked effect on the fever and general well-being. A further case of myeloid type with the enormous count of 988,000; given benzol first by mouth with no great benefit, then by hypo for eighteen days in doses of 4 g. and later 3 g.; the whites fell to 30,040, then to 11,520 four days after stopping the drug, and then to 1,720 nineteen days after. Very serious symptoms of poisoning appeared during the subcutaneous use; a severe generalized papular eruption with a sero-haemorrhagic exudate, fever and weakness. Klein supposes that benzol has different poisonous effects as it is inhaled, swallowed, or injected, but he

has used very high doses on many of his cases, and has been very free even in its subcutaneous administration. A lymphatic case with 61,200, in which X-Rays had no great effect, showed a reduction with benzol to 3,650 in twenty days; at the end of forty days without benzol, the count rose to 13,320, to fall to 6,400 with eighteen days of benzol. The patient was tuberculous, and though the spleen, glands, and blood were bettered, the general condition was greatly injured.

Stein¹¹ reports a freshly diagnosed myeloid case with an initial count 264,000 which with doses of 4-6 g. per mouth fell to 13,600 in about ninety days. The myelocytes, which had numbered 44.5% fell to 2%, the reds rose from three and a half million to five and a half million, the polynuclears rose from 48.5% to 74%, the spleen returned to normal, the general condition excellent, with a gain of 2 Kilo.

From a study of our own case and the cases reported we may draw the following conclusions:

Benzol is a valuable addition to the therapy of leukaemia of any kind. Its institution is, however, so recent, and clinical experience still so scanty, that definite conclusions as to its intrinsic value should be held in abeyance. It would seem to have no uniform action; in all cases it reduces the white cells, but in some, apparently those with very high counts, it does not reduce the leucocytes to normal, while in cases of 100,000 to 200,000 it may give brilliant results with normal white counts, greatly diminished or normal spleen, distinct gain in weight and strength, and loss of fever. On the other hand, we may have paradoxical reactions with falling white counts and gain of strength with no change in the spleen, or we may find decrease of the spleen with persisting high leucocytic counts, or there may be low counts with many pathological leucocytes, or there may occur sudden leaps in the number of white cells. The red corpuscles and the haemoglobin are usually very beneficially influenced. When X-Rays can be used in combination very favorable results may be obtained, the blood returning to normal with no persisting myelocytes. It is very probable that the results of benzol-therapy are variable for two reasons. (1) The cases in themselves vary in intensity and in the fundamental pathologic conditions or etiological factors in the bone-marrow, the spleen, or lymphoid sys-

tem. (2) The results are in some way dependent on the size of the dose of benzol, which dose may be either stimulating or depressing to the tissues involved and this dose may be peculiar in a marked degree to each case or individual. We should therefore suggest that the effect of benzol should be carefully checked by daily blood examinations so as to gauge the optimum dose, and to forestall any symptoms of benzol poisoning.

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ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE—FORTIETH ANNUAL MEETING.

The fortieth annual meeting of the Association of the Alumni of the Albany Medical College was held in the amphitheatre on Tuesday, May 27, 1913. The usual informal reception was held in the college library, where photographs were exhibited, and greetings exchanged between the hours of 9 and 11 A. M. The meeting was called to order by the President, Dr. Arthur G. Root ('90) of Albany, N. Y., at eleven o'clock.

The following named members of the Association, with invited guests, students of the college and others interested, were present: Alfred B. Husted, ('63); Charles F. Scattergood, ('68); William H. Murray, ('69); D. C. Case, Willis G. Tucker, ('70); Daniel H. Cook ('73); Marcus M. Lown ('77); J. H. Cotter, Chas. A. Ingraham, ('78); James H. Mitchell, ('81); A. Y. Myers, J. B. Washburn, ('82); Herbert L. Odell, I. M. Slingerland, ('83); Robert Babcock, ('84); Elmer E.

Finch, ('86); Andrew MacFarlane, Charles H. Moore, ('87); John Archibald, Geo. G. Lempe, ('88); G. Emory Lochner, J. Montgomery Mosher, F. S. Snow, William Van Doren, ('89); A. G. Root, ('90); William G. Lewi, ('92); Edward J. Bedell, C. H. Herrick, Ward E. Hunt, George H. Janes, Edward M. Leach, C. J. Robinson, Thomas A. Ryan, Walter B. Sabey, Louis Van Hoesen, P. G. Waller, ('93); Charles Bernstein, ('94); J. C. Sharkey, Henry L. K. Shaw, ('96); Charles S. Prest, A. H. Traver, ('98); Eugene E. Hinman, ('99); Arthur J. Bedell, Joseph A. Cox, Gerald Griffin, ('01); Frederick E. Bolt, Sylvester C. Clemans, Frank Keator, Virgil D. Sellick, James N. Vander Veer, I. E. Van Hoesen, ('03); John Isaac Cotter, Branson K. De Voe, Malcolm Douglas, Edward A. Stapleton, ('04); C. W. Louis Hacker, Chester A. Hemstreet, Thurman A. Hull, H. M. Southworth, George Walrath, ('05); Percival W. Harrig, W. A. Reynolds, ('06); J. L. Bendell, Tiffany Lawyer, Wm. C. Treder, ('07); John J. A. Lyons, ('08); Harry H. Drake, Orla A. Druce, Eddy S. Haswell, C. B. Witter, ('09); W. S. Lilienthal, ('10); La Verne A. Bouton, ('11); A. H. Wheeler, ('12); Rufus B. Crain, Walter R. Coakley, Paul Charles Fleri, Arthur Saul Katzenbogen, G. G. Nicosia, ('13); Samuel B. Ward, (Hon.).

On motion of Dr. Willis G. Tucker, the reading of the minutes of the last annual meeting was dispensed with and the minutes were approved as printed in the ALBANY MEDICAL ANNALS.

The President introduced Professor Edgar A. Vander Veer, who delivered the following address of welcome on behalf of the faculty:

ADDRESS OF WELCOME.

DR. VANDER VEER'S ADDRESS.

Mr. President and Fellow Alumni: Since the formation of the Alumni Association, in 1873, it has been the custom to have an address of welcome from some member of the Faculty. This year the agreeable duty has been assigned to me, a duty made more pleasant by the fact that fifteen years ago to-day I had the honor to graduate from this institution. At that time the Faculty address of welcome was delivered by Dr. Morrow, and the class numbered fifty-seven.

On behalf of the Faculty, therefore, I extend to you to-day a most cordial welcome as you return to your Alma Mater.

It may not be without interest to compare, for a few moments, the present methods of instruction with those of fifteen years ago. At that time the course covered a period of three years of seven months each; it is now made up of four years of eight months each. The entrance requirements then were forty-eight academic counts or their equivalent; the Board of Regents now require sixty academic counts, all of which must be secured before entering the first-year class.

Beginning with the next session, in addition to the usual medical student's certificate, the applicant must present evidence of having completed an additional year's work in physics, biology and chemistry.

Fifteen years ago the Faculty was composed of thirteen full Professors, five Adjunct Professors, three Clinical Professors, six Lecturers and seventeen Instructors. Among the Professors who were with us then, but since deceased, were Maurice Perkins, Lewis Balch, William Hailes and Willis G. Macdonald—names that will live long in the history of the institution. With the present constitution of the Faculty, and the curriculum, you are familiar, a marked increase in both instructors and subjects. That we have been able to accomplish all this is due to the loyal and hearty support of our Alumni. A Faculty may make a medical school a success but unless it has the keen support of its graduates it cannot expect to attain to its greatest usefulness. Pupils also may make a medical school a success and in the ultimate results count for much. That the Alumni of the Albany Medical College are loyal to their Alma Mater is amply proven by the fact of so many graduates of this college sending their sons here to receive their medical education.

We have all realized many times in the last few years that this is an era of restlessness and changing conditions, which some choose to call "progressiveness." And nowhere is this change better illustrated than in that of medical education. The Albany Medical College has always endeavored to keep in the forefront of medical progress, and a majority of the best medical laws on the statute books of this State, both educational and otherwise, received the earnest support of its graduates and the men constituting its Faculty.

It is interesting to study the manner in which this school has met its many necessities. Beginning with the organization and erection of the old hospital in 1849, by the efforts of such men as Drs. March, Thomas Hun, Armsby, James MacNaughton and others, an impetus was given to medical education in this State, not hitherto met outside of the City of New York. For years it could assert that in clinical opportunities it commanded a most advanced position. Later when the teaching of bacteriology and the study of microorganisms, destined to give us a proper understanding of the future advance in anti and aseptic surgery, became necessary, accommodations were developed within the college building. Soon, however, it became evident that with the rapid development of laboratory methods something more substantial must be secured. An appeal was made to our friends resulting in the liberal contribution of \$22,000 from Mr. Matthew W. Bender, for the construction of the Bender

Hygienic Laboratory. The city authorities granted the college an easement of park land upon which to construct this building, and the Faculty voted the sum of \$10,000 with which to equip it with proper apparatus.

In 1873 St. Peter's Hospital was organized and buildings changed making it a suitable plant for dispensary and hospital service. Then the Child's Hospital was established, affording excellent opportunity for the study of pediatrics, and later furnished by a member of its staff with a splendid apparatus for the treatment of deformities. Somewhat later St. Margaret's Home was constructed and here has been a fine opportunity for the study of the diseases of infants.

In 1898, after the subject had been discussed for some few years, the Faculty and Trustees of the college, as well as the Medical Staff of the Albany Hospital, importuned the Board of Governors of the Albany Hospital for the erection of new buildings in which to care for the rapidly increasing number of patients coming to that institution. This resulted in the construction of the admirable plant now known as the Albany Hospital. Since then there has been added the pavilion for the care of patients suffering from mental disturbances, also another pavilion for contagious diseases, as well as a separate hospital for the care of smallpox patients. More recently a pavilion for the care of tuberculosis has been erected, with a capacity of 100 beds, which affords the very best of clinical instruction in physical diagnosis.

It is with much pleasure I am permitted to state that through the liberality of its many friends there is now being constructed on the grounds of the Albany Hospital a building for the Nurse Training School. It is to cost \$150,000, and when completed will liberate space in the Nurses' Home where our splendid X-ray apparatus can be used to better advantage, and much good work accomplished in electro-therapeutics, also the pathological laboratory in connection with the hospital can be enlarged and additional room afforded in the upper stories for more patients, also better accommodations for the internes are furnished.

Now, within a short time we have the completion of the new Homeopathic Hospital. In addition to this there has been carried on successfully the Home for Incurables, whose attending staff at times present very interesting cases for college instruction.

By contribution from the Faculty fund we have an association with the Guild for the Care of the Sick in Albany, where our students are able to gather much of their knowledge in obstetrics, and valuable aid is rendered in this way.

Largely due to some members of the Faculty of the college the South End Dispensary was organized, and is becoming a strong feature in our clinical instruction.

Additions were made to the County Hospital and where much good clinical material has been made use of.

Some few years ago the Labor Organizations of the city constructed a pavilion for the care of tuberculosis and this affords an opportunity for

one or more of our students to render necessary service from time to time.

In 1904 it became necessary for us to organize a laboratory for instruction in physiological chemistry and experimental physiology. In doing this we were obliged to take Alumni Hall and convert it into a good, working laboratory for this purpose. With our excellent apparatus it has proven a very serviceable part of our instruction. Two years ago the Faculty realized that the present facilities of the college were inadequate, and secured, through the generous action of the Board of Supervisors of the County, a portion of land known as the Penitentiary site, for the erection of new buildings for the Albany Medical College, the stipulation being that the poor of the County, in need of medical or surgical treatment, were to be attended free of charge by members of the college Faculty. Some recent changes in the plans for the Court House and County Jail have made it necessary to change the original location of the college buildings. We are now to have a deed of the ground bounded by Delaware Avenue, Myrtle Avenue, Leonard Place and Lark Street. When the new Boulevard is constructed, connecting Washington Park with Beaver Park, it will be enlarged by extending it back to the Boulevard, which will give us ample room for all of our various buildings. This location brings the college in easy communication with hospital facilities by a walk of eight or nine minutes, or, by the use of the electric cars, to any part of the city.

At the present time the greatest need of the college is more laboratories, and in accordance with this need, it was voted at the last meeting of the Faculty to begin at once the erection of a laboratory on the Penitentiary site in which to afford instruction in chemistry, experimental pharmacology, *materia medica* and therapeutics and suitable lecture rooms. This is to be the beginning of a group of buildings on the unit plan, and which the blue prints here shown illustrate very well.

So soon as our deed is recorded we will make known to our friends the amount of money required, and we will endeavor to raise a sufficient sum, using what may be absolutely necessary for the construction of the one-unit laboratory, the balance to be placed in the endowment fund. The faculty now has for this purpose about \$20,000 and the promise of several good subscriptions, so soon as the Trustees of the College have full possession of the land. There is also in the Union Trust Company the sum of about \$17,000 known as the Macdonald Memorial Fund, and as soon as this can be increased sufficiently to warrant us in its construction a second unit of the plant will be erected, perhaps leaving the central portion for administrative work, and our large lecture room to be finished last. We are not obliged to leave this present building until our new buildings are all complete and much of the work can yet be continued here in a very advantageous manner.

As you well know, the Regents now require that we shall have six full paid instructors who shall devote their entire time to teaching and not in any way to engage in practice. Our income is sufficient to meet these

demands, and the running expenses of the college, but teachers occupying professorships in the various clinical subjects will not receive any pecuniary emolument.

Like many other institutions in this country, we have had our share of criticism, and while it cannot be denied that much that has been said contains the element of truth, yet some very uncalled for comments have reached the public. The college is not perfect, and needs strengthening in certain lines.

The Albany Medical College has graduated physicians for the past seventy-four years, men who have occupied important positions in many of the various institutions of our country, also have become famous in their practice, and while medical education has become more expensive, it is believed that funds will be forthcoming and our Alma Mater will be able to continue its good work for another seventy-four years.

Among the possibilities of our increased instruction is that we may be able to have accommodations offered us in the splendid new hospital now being constructed in Troy; to have certain days in the week, and under the able instruction of clinical professors selected from the staff of the hospital, to conduct this line of teaching.

We must not lose sight of the fact that the Medical Department of the State Library affords our students the very best opportunity for study and research work. Although the fire was disastrous, yet the Department was able to recover to the extent of opening the new rooms in the Education Building, on Washington Avenue, the first of January, 1913. The library has a list of over four hundred medical journals coming from every country in the world, a large number of up-to-date textbooks, while many very valuable current medical periodicals are being completed through gifts, purchase and exchange, making this a valuable adjunct for our students to keep abreast of the literature of the day, as well as for research work.

On motion of Dr. Thomas W. Jenkins the thanks of the Association were tendered Professor Vander Veer for his address, and a copy was requested for publication.

Dr. James H. Mitchell then moved that the President appoint a committee of five to nominate officers for the ensuing year. Carried. The President appointed as such committee: Drs. James H. Mitchell ('81), Albert Vander Veer ('62), Alvah H. Traver ('98), George G. Lempe ('88), and Daniel C. Case ('70).

The Recording Secretary presented the

REPORT OF THE EXECUTIVE COMMITTEE AND RECORDING SECRETARY.

A regular meeting of the Executive Committee of the Alumni Association of the Albany Medical College was held at the University Club on the evening of March 31, 1913.

Dr. Root called the meeting to order at 8.30 p. m. with the following members present: Doctors Root, Tucker, Babcock, Mosher, DeVoe, Douglas, J. N. Vander Veer and Corning. As Dr. Mosher was unable to remain through the meeting Dr. Babcock moved that Dr. Corning be appointed Secretary pro tem. On motion the reading of minutes of the last meeting was omitted. Dr. Babcock submitted the treasurer's report as follows:

Balance, May 1st.....	\$55 14
Dues	142 00
	<hr/>
	\$197 14
Expenses	75 75
	<hr/>
Balance	\$121 39

Dr. Root, as chairman of the Special Committee appointed to revise the constitution, reported that owing to the illness of Dr. Mitchell no formal action had been taken by the Committee. Dr. Vander Veer moved that the Executive Committee extend an invitation to the Faculty to choose one of their number to deliver an address on Commencement Day. Motion seconded and carried. Dr. Root stated that Dr. Mosher had suggested that Keeler's be considered as a possible place for holding the annual banquet. Dr. Vander Veer moved that the Banquet Committee be advised to take Keeler's into serious consideration. Motion seconded by Dr. Tucker. Passed. Dr. Vander Veer moved that the Banquet Committee be appointed. Dr. Corning moved that Dr. Joseph A. Cox, Dr. Malcolm Douglas and Dr. J. L. Bendell constitute the Dinner Committee with Dr. Cox serving as Chairman. Motion passed. Dr. Tucker moved that Dr. Vander Veer be empowered to send out the usual notice. Carried. The meeting then adjourned.

ERASTUS CORNING,
Secretary pro tem.

On motion of Dr. Frank Keator, the report of the Executive Committee was accepted and ordered entered upon the minutes.

The Treasurer, Dr. Robert Babcock, presented his report for the year as follows:

TREASURER'S REPORT.

Cr.

Balance on hand May 1, 1912.....	\$55 14
Dues received during year 1912.....	142 00
	<hr/>
Total	\$197 14

Dr.

Various bills paid for which vouchers are presented.....	\$137 00
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Balance on hand May 1, 1913.....	\$60 14
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College Building Fund.....	\$122 28
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[Signed]

ROBERT BABCOCK,

Treasurer.

On motion of Dr. Huested, the Treasurer's report was referred to an auditing committee, consisting of Drs. Huested, Lown and Archibald, who subsequently reported it correct. The report of the Auditing Committee was received and the committee discharged and the report of the Treasurer was accepted and ordered placed on file.

President Root then delivered the following address:

PRESIDENT ROOT'S ADDRESS.

Fellow Alumni: Once more it becomes my pleasant duty to address you at the opening of this our annual convocation. True, we are not met here to-day for the purpose of a "flow of soul" nor yet are we gathered together to discuss "funeral baked meats." Of all the learned professions, ours is the one that brings its members in constant contact with the suffering and sorrow of poor humanity. For that reason it behooves us to go about our labors with a cheerful countenance and with the morning sun ever in our faces. There is much more to the successful practice of medicine than a thorough mastery of its principles. The cheerful optimist, with a reasonable degree of professional skill, is almost certain to achieve a greater success than the gloomy pessimist weighed down with the consciousness of his own professional profundity. I make this plea for sick-room sunshine out of the fullness of personal observation. How often have I seen the faces of the little ones wreathed in smiles, and the countenances of the aged and infirm light up at the reflection of good nature and happiness on the features of the family physician! Confidence lies at the root of most effective cures, and confidence is the favorite child of cheerfulness.

Before proceeding to a serious discussion of the work of our association, I should like to be permitted a few remarks upon the general principles of organized effort. Probably no period in the history of our country has been more prolific in bringing to the attention of the public the claims of organization than the year which has just passed. Almost every department of human endeavor has sought to better its conditions by the adoption of this form of concerted effort. Capital has seemed to reach its aphelion in its circuit of the sun of industry. The white-hot center of

labor has resented the intervening distance, and the strong arm of the law has been invoked to bring labor and capital into closer contact. The organization of the latter into the various trusts and combinations has received a severe blow and the masses of the people have been thrown into a state of unrest.

Students of sociology are giving their most earnest thought to a solution of the great problems that now confront the American people. The claims of those unfortunates along life's pathway who have fallen in the bitter struggle for existence are being brought before the attention of humanitarians and philanthropists as never before in the history of our civilization. The newspapers teem with schemes for the uplift and betterment of the human race. The philosophy of life seems to be reducing itself to its lowest terms and to be finding the solution of the equation in the elementary principles of right and wrong and a due regard for the claims of one's neighbor.

We, as the alumni of our old and honored medical alma mater are but a part of this great scheme. By realizing what we owe to the school of medicine of which we are the graduates, what we owe to each other as members of the greatest of all the professions, and our duties and obligations toward those to whom we minister, we can exemplify in our own organization the highest benefits to be derived from banding together for the common good. Let us therefore, in a spirit of hopefulness, and with a breadth of view as wide as the horizon of life, realize the infinite possibilities in store for us in the advancement of science, the vanquishing of disease, and the bringing of "the greatest good to the greatest number." Thus let us crown our own lives with the consciousness of work well done and fit ourselves to be the firm and lasting foundation of the new Albany Medical College that shall stand so long as time endures.

The report of the Historian of the Association, Dr. Bedell, was then presented and ordered entered on the minutes.

REPORT OF THE HISTORIAN, ARTHUR J. BEDELL, M. D.

Mr. President and Fellow Alumni: For years we have heard of the new college buildings and a year ago you were told that a definite site had been acquired. To-day we can positively assure you that the title to the new property on Delaware avenue will be secured shortly and the project of raising money for at least one laboratory will be actively carried on this summer.

This morning we welcome forty-eight new members into our Association. Men who have had an excellent course of instruction and if they follow the teaching received will be an honor to our college and this organization. We earnestly request each new member to notify us of any change of address and ask all members to write about new hospital appointments or other medical honors so that such information may be given to their fellow Alumni through the news columns of the ANNALS.

The decennial classes will hold their usual reunions. As far as known, there are no surviving members of the Class of 1843. Three of the Class of 1853 are known to be living, a letter from one, Dr. Johnson, eighty-three years old, has been received in which he expresses his regrets at being unable to be present on this occasion.

1863 will be reported by Dr. Alfred B. Huested. 1873 by Dr. Henry B. Whitehorne. 1883 compiled by Dr. William S. Donnelly and read by Dr. Herbert L. Odell. 1893 by Dr. Charles W. Hamm. 1903 by Dr. Sylvester C. Clemans.

The members of the Class of '98 held their fifteenth re-union last evening and are with us to-day.

The decennial classes will find their records, old letters and photographs in the different class rooms after this meeting is adjourned.

NECROLOGY.

During the past year twenty-five of our Alumni have died.

Dr. EDWARD M. Root ('56), Painesville, Ohio, died August 9, 1912, aged 80.

Dr. HAMBLIN B. MABEN ('57), Kingston, N. Y., October 15, 1912, aged 79.

Dr. WILLIAM E. JOHNSON ('59), Waverly, N. Y., December 16, 1912, aged 75.

Dr. CHARLES DICKINSON ('60), Cobleskill, N. Y., April 29, 1913, aged 80.

Dr. ANDREW T. VEEDER ('63), Pittsburgh, Pa., January 4, 1913, aged 70.

Dr. FRANK A. SHORTLEFF ('64), Somerset, Mass., April 9, 1913, aged 75.

Dr. ALBERT V. D. COLLIER ('66), Catskill, N. Y., December 15, 1912, aged 75.

Dr. CHARLES S. HAZELTINE ('66), Grand Rapids, Mich., December 17, 1912, aged 78.

Dr. JOHN W. JOHNSTON ('66), Claysburg, Pa., May 8, 1912, aged 59.

Dr. GREENVILLE A. EMORY ('67), Middletown, N. Y., December 12, 1912.

Dr. WILLIAM HAILES ('70), Albany, N. Y., July 6, 1912, aged 62.

Dr. JOHN K. THORNE ('71), Gloversville, N. Y., July 7, 1912, aged 70.

Dr. MILES G. O'REILLY ('74), Fishkill Landing, N. Y., July 11, 1912.

Dr. EDWARD W. CARHART ('78), Brooklyn, N. Y., May 15, 1913, aged 56.

Dr. CHARLES F. HUDDLESTON ('79), Chicago, Ill., Nov. 11, 1912.

Dr. ADAM WALRATH ('79), St. Johnsville, N. Y., August 7, 1912, aged 60.

Dr. HENRY DELOS BLANCHARD ('82), Portlandville, N. Y., June 26, 1912, aged 57.

Dr. JOSIAH HASBROUCH ('85), Port Ewen, N. Y., March 25, 1913, aged 48.

Dr. ARTHUR CAPRON ('86), Albany, N. Y., April 22, 1913, aged 63.

Dr. WILBUR F. LAMONT ('89), Catskill, N. Y., August 1, 1912, aged 49.

Dr. MINOT A. STEELE ('90), Portsmouth, R. I., Feb. 17, 1913, aged 45.

Dr. EVERET E. TRACY ('91), Columbia, Pa., April 18, 1913.

- Dr. EDWARD L. GAUS ('97), Albany, N. Y., June 29, 1912, aged 44
Dr. PIERCE J. O'BRIEN ('98), Troy, N. Y., May 25, 1912.
Dr. JOSEPH DAVIS ('08), High Falls, N. Y., April 1, 1913, aged 26.

CLASS OF 1843.

All the members of the Class of 1843 have passed away.

LEWIS ARMSTRONG, J. McM. AUSTIN, BRYAN D. BAKER, URIAH BIGELOW, JOHN CAMPBELL, HALLAN C. CHAMPLIN, ENNIS CHURCH, WILLIAM A. CLARK, ROCKWELL COWLES, A. M. CROMWELL, GEORGE N. DOX, HENRY B. FAY, NICHOLAS N. LAWYER, THOMAS MILLSPAUGH, JAMES K. MURPHY, JAMES D. NIVER, ANDREW VAN ANTWERP, D. P. VAN VLECK, HUMPHREY C. WATSON, N. V. R. WITBECK.

Dr. Bedell presented the following report of the

CLASS OF 1853.

Of the Class of 1853, the only surviving members are: DeLos W. Braman, Braman's Corners, Schenectady, N. Y.; Hercule Dansereau, Thibodeaux, La., and Ianthus G. Johnson, Greenfield Centre, N. Y., who wrote a letter stating that he had not been in active practice for the past ten years, although he is frequently consulted. He seldom goes away from home except to visit his two sons, one Dr. A. W. Johnson, of Mechanicville and the other son living at Saratoga. Dr. Johnson was eighty-three years old last March so is beginning to feel his long strenuous life. He regrets his inability to be present at the meeting on the 27th.

GABRIEL D. AYERS, Brooklyn, N. Y., died October 1876.

JAMES D. BAILEY, Albany, N. Y., died June 24, 1898.

S. P. BARNARD.

HENRY B. BARSTOW.

JOHN H. BECKER, died 1873.

GEORGE E. BENSON, Hudson, N. Y., died May 30, 1896.

WILLIAM B. BROWN, Palmyra, N. Y.

GEORGE E. BULLARD, Blackstone, Mass., died March 25, 1905.

MATTHEW H. BURON, Troy, N. Y., died April 28, 1895.

WILLIAM F. CADY, Lafayette, Ind., died 1885.

HENRY S. CASE, Albany, N. Y., died June 14, 1899.

JAMES CROMWELL.

ALEXANDER A. EDMESTON, died 1871.

HIRAM A. EDMONDS, Albany, N. Y., died April 1857.

THOMAS J. GARDNER.

W. R. GRISWOLD, Chicago, Ill., died Feb. 21, 1892.

REUBEN H. HAMMOND.

FERDINAND V. V. HAYDEN, Philadelphia, Pa., died Dec. 22, 1887.

FREDERICK HENDERSON, Whitestown, N. Y., died May 2, 1870.
JOHN H. HILL, Quaker Street, New York, died 1881.
J. H. HOYSRADT.
ROGER KEYES, Philadelphia, Pa., died June 10, 1890.
CHARLES H. LORD.
HENRY MARCH, died May 7, 1896.
FRANK E. MARTINDALE, Port Richmond, N. Y., died 1903.
ASA D. MCINTYRE.
HENRY McMAHON, Sank Rapids, Minn., died July 2, 1877.
EMERY A. MERRIFIELD, Macon, Mo., died Dec. 7, 1900.
JAMES A. MOWRIS, Lafayette, Ind.
ISAAC J. MAXLEY, Bangor, N. Y., died Oct. 12, 1884.
BARENT A. MYNDERSE, Schenectady, N. Y., died Oct. 2, 1887.
DWIGHT W. RECTOR, died Feb. 19, 1905.
HERMAN M. REYNOLDS.
EDMUND C. ROGERS.
W. SCOTT SCHERMERHORN, Jefferson, Iowa, died June 12, 1892.
MARINUS W. SEAMAN, Denver, Colo., died Sept. 15, 1897.
DARIUS H. SEELYE.
ALEXANDER SHILAND, West Troy, N. Y., died Oct. 19, 1885.
NEWTON C. SPANN.
CHARLES P. STAATS, Albany, N. Y., died April 16, 1884.
PETER I. STANLEY, Windham, N. Y., died Oct. 5, 1901.
JOHN I. SWART, died Nov. 24, 1878.
R. LEROY TELFAIR, died April 13, 1886.
LEVI P. WAGNER.
LEVI WEED.
JAMES M. WHEAT, Redlands, Cal., died Nov. 27, 1910, aged 85.
GEORGE D. WHEDON, Syracuse, N. Y., died Feb. 14, 1912.

Dr. S. F. HANCE, Fairport, N. Y., writes: "As I am not to be present at the Alumni banquet, I will extend my salutations and drink from the flowing bowl of crystal water to the memory of those noble men who were the founders and builders of our Alma Mater and to the health, prosperity and happiness of all members of the Alumni Association. I am quite likely the oldest living Alumnus of the Albany Medical College. Birth 1825, Class of 1854."

Dr. Huested presented the following:

HISTORY OF THE CLASS OF 1863.

Mr. President and Fellow Alumni: The history of the Class of 1863 is nearly completed. There were forty-four young men sent out that year from their Alma Mater, to start life's work. How well and nobly that work has been accomplished will appear when it can be said that no blot or stain, on the character of a single one has been found.

So far as known forty-two entered upon and continued in the practice of medicine, and two became pharmacists. It is known that twenty entered the medical service of the U. S. Army, four became teachers in medical and pharmacy colleges, and very many held positions of honor and trust in the communities in which they lived. It is not necessary to repeat facts given by the writer in previous class histories, in 1884 and 1903, but refer those interested, to the Alumni proceedings of those years. At the present time there are records of the death of twenty-seven. Thirteen of these have died during the last ten years.

GEORGE F. BARKER, at Philadelphia, Pa., May, 1910.

DEWITT C. BEENE, Sparta, Wis., July 4, 1909.

WM. N. BONESTEEL, Troy, N. Y., 1905.

DANIEL S. HARDENBURG, Jersey City, N. J., Dec. 31, 1907.

WM. M. HENDRICKSON, Lompoc, Cal., May 30, 1910.

JOHN HOTALING, Gallupville, N. Y., March 1907.

JACKSON A. HUBBARD, East Dubuque, Iowa, Dec. 9, 1907.

S. B. ERWIN, Hebron, N. Y., 1907.

PHINEAS S. ROSE, Anoka, Minn., Jan. 18, 1905.

ENOCH V. STODDARD, Rochester, N. Y., June 6, 1908.

ROBERT C. TUTTLE, Rockland, N. Y., Nov. 10, 1910.

EDWARD E. VAN DE WARKER, Syracuse, N. Y., Sept. 6, 1910.

ANDREW T. VEDDER, Pittsburg, Pa., Jan. 4, 1913.

The addresses of Randall E. Ingwersold, Abram V. Ketchum, A. B. Skillman, Francis L. Turner and Henry Van Guysling are not known. Letters to O. H. Blandin and C. B. Darrall have been returned unopened. No response has been received from Henry C. Cotton, Joel H. Mead and Richard T. Mead.

ROBERT W. BRADY, of Honesdale, Pa., writes: "Is it possible that fifty years ago, I received my diploma?" He then pays tribute to the professors of those days, March, Armsby, MacNaughton, Townsend and Quackenbush. "I went direct from the college into the Army as Assistant Surgeon of the 139th N. Y. Infantry, was promoted to Surgeon of 96th N. Y. Infantry. After the close of the war, came to Honesdale and have been here ever since, except six months in Europe. Am doing some practice yet in my old families. I am President of the County Medical Society, have held all the positions of honor and trust in the gift of my town and am in good health and prosperous. Kind greetings to the Alumni.

J. CASH COLEMAN of Goshen, N. Y., has retired from practice.

HENRY T. DANA writes from Cortland, N. Y.: "I am still actively engaged in practice, driving my own auto when necessary and doing pretty much everything that presents itself, but night work. At a recent meeting of the Cortland County Medical Society a committee was appointed to arrange for a complimentary dinner to be given by the society

on the occasion of the fiftieth anniversary of my graduation and as a member of the society, I most cordially invite you all to be present."

WARREN E. DAY entered the medical service in the Army on graduation, and remained until 1877. He was mustered out at Prescott, Arizona, where he has since lived. He writes: "Married, have wife and seven children, the youngest nine years old. In practice as usual. Decline business requiring long horseback rides, except for old-timers known and cared for, for nearly forty years, who refuse to pass over without my forced consent."

JOHN H. DEWITT is at Saugerties, N. Y., where he has been in practice for fifty years, and is still in the harness. He writes that he hopes to be present to-day.

EDWARD M. GOODWIN writes: "In efforts to recall events and associations of '63, we made a demand on 'films' of memory to reproduce scenes, companions and events associated with those years. Some were reproduced. The college building and grounds, the gathering of students on steps and lawn, the rush for amphitheatre and class rooms. Then come the professors, March a Trojan in surgery, in long frock coat, silk hat and black kids, a pleasing smile, a cordial nod. MacNaughton, stern and impressive, the genial and kind Armsby, the polished Townsend, Quackenbush, enthusiastic in his branch. Last the janitor, who so gracefully (?) demonstrated the swallowing of the stomach tube and smilingly gathered the contributions showered upon him. For myself, little may be said. After graduation, I received on Jan. 6, 1864, commission as Assistant Surgeon, U. S. Navy; served until the close of the war; came to Toledo, January, 1866, and have since been doing as well as I knew how. To those of our class who have 'gone before' 'peace to their ashes.' To those remaining, 'Hail and Farewell.' Dr. Goodwin in conclusion quotes the poem 'A Living Epitaph' which is so high a standard for young men that I beg to quote it as a goal for the present graduating class to attain.

"When I pass out, and my time is spent,
I hope for no lofty monument,
No splendid procession, marching slow,
Along the last long road I go;
No pomp and glory I care for then,
When I depart from the world of men.

But I'd like to think, when my race is through,
That there will be in the world a few
Who'll say: Well, there is a good man gone!
I'm sorry to see him passing on,
For he was a sort that's fair and square,
The kind of fellow it's hard to spare.

He hadn't money, he hadn't fame,
But he kept the rules and he played the game,
His eyes were true and his laugh was clear
He held his truth and his honor dear.
And now that his work is at an end,
I know how much I shall miss my friend.'

If my life shall earn such words as those
I shall smile in peace as my eyelids close,
I shall rest in quiet, and lie content,
With the words of a friend for my monument."

As for myself, after graduation, I was appointed Assistant Surgeon of the 21st N. Y. Cavalry, later made Surgeon, serving until the close of the war and one year longer. The regiment, when the war ended was sent west to guard the overland route from Indians, and was stationed at points west of Denver for about 200 miles. The winter of '65 and '66 was spent mostly in Wyoming Territory. In May, '66 the regiment was relieved by Galvanized troops, as they were called. They were composed of men who had been in the Southern army, had taken the oath of allegiance and enlisted in the regular army. We were mustered out at Denver City in June and July, '66. Coming back to Albany I entered upon the practice of medicine, and was for one year demonstrator of anatomy in the Albany Medical College. In '68 withdrew from medicine and entered upon the practice of pharmacy, continuing in the same forty-one years.

For thirty years have been Professor of Materia Medica and Botany in the Albany College of Pharmacy, and for twenty years member of the State Board of Pharmacy and still fill these positions. Have been an active member of the American and New York State Pharmaceutical Associations and was president of the latter two terms. Four years ago I retired from the practice of pharmacy and have gone back to nature, in the village of Delmar to renew my youth.

ALFRED B. HEUSTED,
Class Historian.

CLASS OF 1873.

Reported by Dr. H. B. WHITEHORNE, Verona, N. J.

Dr. D. H. Cook, Albany, N. Y., writes: "No event of interest to the members of our class has occurred during the last ten years, the only thing that comes to me now, is that I have moved further up Clinton avenue, now residing at 523, rather commodious quarters. I have been well, don't think I have been laid up a day during that time, am still in full practice, continue to run a stock and fruit farm of no mean size for diversion. Am happy to report that the world is using me fully as well as I deserve. Hope to see you all at our Alumni meeting."

Dr. H. C. EVARTS, Manhattan State Hospital, Ward's Island, N. Y., writes: "After graduation I served a year as resident physician and surgeon in the Albany City Hospital and this experience developed within me an inclination for institution work. After leaving the hospital, engaged in private practice for a time. Then became a steamship surgeon in the Transatlantic service for about a year and a half; after which was in private sanitarium work (among insane) for seven years. Have since been connected with New York Municipal and State hospitals for insane. Am now Assistant Superintendent in the Manhattan State Hospital, the largest in the country where the field for this kind of work is abundant and varied. Am particularly interested in administrative work among the insane. To my mind there is no specialty in medicine so attractive and interesting as that of psychiatry."

Dr. C. K. FRAZIER, Cobleskill, N. Y., writes: "A short but comprehensive sketch of my life is embodied in the following:

My entrance to life was naked and bare,
My progress through life has been trouble and care,
My exit from life, to I know not where,
But doing well here, I will do well there.

I have enjoyed all that I deserve of prosperity and perhaps a little more, have great faith in humanity, and believe the world is getting better, in fact am an optimist, as to great riches garnered in the practice of the profession, they are not mine, but that does not worry me. Have served as coroner of my county twenty years, been physician to the Board of Health of my native village for the same number of years. Will endeavor to be present at the Alumni meeting."

Dr. G. L. MERRITT, Cherry Valley, N. Y., writes: "I commenced practising in Cherry Valley; removed to Gloversville in 1876 and was there about one year. Returned to Cherry Valley where I have been in practice ever since. Married and have one daughter. Was elected Overseer of the Poor for sixteen consecutive years. Elected president of the village twice. In 1904 was a candidate for Member of Assembly. Have always enjoyed and am still enjoying a fairly active practice. Life uneventful. Presume experience has been that of the average, general practitioner."

Dr. L. T. MORRILL, Peabody, Kansas, writes: "I wish earnestly that I could be with you but it is impossible, so am doing my next best, in sending you kindly greetings and a few lines as regards my past and present. Fellow Classmates, I am looking back to-night, to that time forty years ago, when I stood before you and spoke your valedictory. It is a long time to me and yet it is very distinct. Now to be brief. I am still in the harness, doing office practice. I settled down in Albany for a few years, then spent a year in Chicago. Went to Colorado, practiced in Denver and in Georgetown. Came to Kansas and have

practiced here since 1885. Since leaving Chicago have been to England. Put in eight months in the hospitals studying surgery. Was surgeon D. & R. G. Railroad in Colorado, have been surgeon Santa Fe Railroad in Kansas, ten years. Married my second wife in 1887. Have son and daughter from second marriage. Here's how and in the language of my old friend, Joe Emmett, may you all live long and continue to prosper."

Dr. C. M. RULISON, St. Joseph, Michigan, writes: "I often think of the old boys of the Class of '73 and wish I might meet with those who are left, once more. I have been a resident of old St. Joe, Michigan, for over twenty years, am in good health and hope to end my days here. Remember me to the Class of '73 with best wishes to all."

Dr. W. S. SHIELDS, Marion Center, Pa., writes: "There has been but little change with me in the last ten years. Have not been very active in practice, have been engaged more especially in the drug store. My oldest son graduated in pharmacy at Pittsburg, Pa., in 1904 and has been managing the store since that time. I am beginning to feel a little old in my sixty-seventh year but have fairly good health and am able to go all the time. I would like very much to attend Commencement again but not this year. I expect to attend Reunion of Battery at Gettysburg this year. Kindest regards to all our classmates."

Dr. J. A. Wood, Constantia, N. Y., writes: "After my graduating at Albany Medical College, I settled in my native county (Jefferson, N. Y.), carried on the practice until 1900 when I removed to Oswego County where am yet actively engaged in the work. From a financial point of view have been quite successful. In 1879 I married the best girl in the country. We have had two sons born to us, one died when seven years old, the other is now finishing a university course at Colgate. He will then enter a medical college. It is my present intention in a year or two to throw up my pill bags and see something of the world. I would like very much to be present at the meeting and hear from as many of the boys of our class as may be still living."

Dr. H. B. WHITEHORNE, Verona, N. J., writes: "My life has been that of the average practitioner of medicine, full of hard work, without any great amount of gain, so far as money is concerned. I am approaching the end of my career in the hope that such reward as may come to me may be more lasting than any that I have yet attained. Please express my regards to all the members of the class who may be with you."

MEMBERS OF THE CLASS OF '83.

Compiled by Dr. W. S. DONNELLY and read by Dr. H. L. ODELL.

Your historian regrets to state that after a thorough, painstaking canvass of the surviving members of the class, by letter, and urgent

requests for individual histories, he is able to offer but meagre information as to the life work and circumstances of those still in the harness, while a very large proportion has passed to the great beyond where no earthly inquiries are received or answered.

Your historian can only reiterate his disappointment at the few answers received to his letters of inquiry and hope that those who failed to answer will be prepared to furnish the desired information in person at our thirtieth anniversary.

Dr. WILLIAM DAVIS writes that he located, immediately after graduation, in Gloversville where he has since resided. He married the following May, has two children, one boy and one girl, also one grandchild. Has always been a general practitioner and enjoys a good practice. Is a member of the Fulton County Medical Society, the Johnstown and Gloversville Medical Association and the New York State Medical Society. He states that he will endeavor to be present at the class reunion.

Dr. CHARLES P. McCABE, Greenville, N. Y., hopes to be with us to meet the old boys once more but fears he will be unable to do so because of professional engagements. He states that immediately after graduation he attended lectures and clinics in Boston for six weeks, then returned home and took up active practice with his father B. D. McCabe, M. D., now dead, which he still continues. Has enjoyed good health and still feels equal to good and hard work. Married Helena F. Elliott of Hunter, N. Y., in '84 and been blessed with four children of whom two survive. His daughter Dorothy is a student at Columbia College and Charles P., Jr., is a high school pupil. Believes he has had a fair average of success, while in obstetrics and diseases of children he feels he has reason to congratulate himself. Has been Supervisor of his town, President of the village Board of Education, Master of James M. Ostrander Lodge F. & A. M., Chancellor of Zeun Lodge K. of P., Regent of Park Green Council B. A., President of Pioneer, Greene County, and Catskill Mountain Insurance Companies but states that being an indifferent financier he has not yet succeeded in accumulating a competence, for which reason he expects to work until the "Final Summons." Wishes all the old boys who may be present a good time and will join them if possible.

Dr. HERBERT L. ODELL, Sharon Springs, N. Y., wrote your historian a personal letter urging a full attendance of the surviving members of the class and your historian learns he has done all in his power to secure a large attendance by correspondence with others of the old classmates. It is to be regretted that through an error in addressing the letter of inquiry to Dr. Odell, it was returned unclaimed, too late to remedy the mistake. Dr. Odell will undoubtedly furnish the desired information personally as he signifies his determination to be present.

Dr. J. WILSON POUCHER, Poughkeepsie, N. Y., writes that he expects to be with and greet every surviving member at the reunion. Reports that he is still at the same place and believes he has taken root. States that he is enjoying good health; finds plenty of work and has achieved a fair degree of prosperity.

Dr. WILLIAM L. SCHUTTER, Albany, N. Y., writes that he located in Albany, N. Y., and is still at the old stand and fairly prosperous.

Dr. FRANK L. SMITH, Bridgeport, Conn., states that his history can be comprised in very few words. Thirty years of hard work during which he has tried to maintain the dignity of the medical profession and believes that to that extent at least he has been successful.

Dr. J. D. VAN WIRT, Jonesville, N. Y., writes that he is now enjoying good health, which is more remarkable because a few years ago he visited and spent a year in California because of impaired health, a trip from which he was so fortunate as to return with health fully restored. Dr. Van Wirt is very modest in the history he furnishes but as your historian is fully acquainted with his circumstances, he can state of his own knowledge that the doctor enjoys a large and remunerative practice and has a beautiful home. The doctor has been twice married.

Dr. J. M. STONE, Baldwin, Mich., writes that he expects and hopes to be present and states that he located in Newaygo County, Mich., soon after graduation; married after two years and returned to Ottawa County where he practiced six years, returned to Newaygo County where he continued practice twenty years more. His wife died and he subsequently married again and once more made a change to Oceana County where he remained two years, when he took up his present location at Baldwin, which he states is a railroad town and county seat of Lake County. He is Railroad Surgeon, enjoys good health all the time and weighs two hundred twenty pounds.

Dr. I. M. SLINGERLAND, Fayetteville, N. Y., writes that after graduation he remained in Dr. Swinburne's office until August when he married and went to his present location having bought out Dr. Ira Harris. Has two daughters, one a graduate of Wells College, the other of Elmira, both being high school teachers at present. After his first wife died he married Adelia H. Wilson, School Commissioner of Onondaga County. Has been successful in his profession and is in comfortable circumstances. Has a farm of sixty-five acres, fifty acres of which is in fruit. In 1893 and 1908 took post-graduate work in Chicago and in 1898 in New York. Has been something of a traveler, visiting the World's Fair in Chicago, Buffalo, St. Louis and Portland and hopes to visit the fair at San Francisco in 1915. Has made extensive trips through

the West, including the Yellowstone Park and the coast from Seattle to Los Angeles. Is still in active work and hopes to continue until he makes a century. President of Onondaga County Society in 1907, member A. M. A. Syracuse Academy of Medicine and Central New York Medical Society.

Dr. CHARLES WHARTON, Summit, N. Y., writes that he hopes to greet his old classmates at the coming anniversary and gives his history as follows: After graduating located in South Worcester where he stayed one year, then to Summit for another year; in the spring of 1885 moved to Collierville where he practiced three years, afterward returning to Summit where he has since remained. Has a good practice and has laid by something for the proverbial "rainy day." Reports that he has one child, a small boy six feet tall, who is now a medical student at Albany and hopes one day to write M. D. after his name. Dr. Wharton further states that he enjoys good health and is still enjoying life having as companion and counsellor the same lady with whom he started thirty years ago:

Dr. FRANK T. DE LANO writes: "After graduating returned to my native town and resumed my work as a druggist. A few months later married Miss Lottie M. Ingalls and in 1884 began the practice of medicine in Crown Point, N. Y. In 1885 located in Westport, N. Y., and in 1893 came to Rockville Centre, L. I., where I still remain." Dr. De Lano describes Rockville Centre as a growing residential town just outside New York City and states that he has a large and lucrative practice. In 1907 his wife died and two years later he married Miss Irene H. Cornwell of Rockville Centre. He has three children. Reports that he has been fairly active in fraternal and medical societies; served as President of the Essex County Medical Association, Queens and Nassau County Society and the Associated Physicians of Long Island. Hopes to attend the reunion and expects to remain permanently in Rockville Centre.

This sums up the answers received by your historian; it only remains to add a brief sketch of his own life. Immediately after graduating I located in Quaker Springs, N. Y., after two years removed to Ketchum's Corners, same vicinity. Have enjoyed good health. Was married in 1888 to Clara B. Howland who died in 1909. Have one son Charles C. recently married. Have been Supervisor of my town for ten years—and now occupy the position—one term being Chairman of the County Board. Have, like some other members of our class been somewhat of a "Jiner." Twenty-five years ago became a member of Montgomery Lodge F. & A. M. of Stillwater, N. Y., soon after a member of Chapter of the same name, H. R. M. member of Washington Commandery, Knights Templar, and a life member of Oriental Temple, A. A. O. N. M. S. located in the city of Troy, N. Y., State and National

President of the order P. of I. and a member of the P. of H., County and States Medical Societies. My practice is almost wholly in the country and I can say I enjoy it. As to whether or not I have been successful in my work is largely from what point you view success. If success is measured by the discovery of a turtle serum or the interpreting the monkey language in the wilds of Africa, then I cannot claim success, but I may state that I have learned that the work nearest at hand is the most insistent in its demands and that all in all this is the best possible world to live in, at least so far as our knowledge extends.

In closing let me say that I hope to write the class history "up to date" for 1923 and sincerely hope to record each active member of to-day, as still hale and in the harness when that now distant day rolls around. In this connection I trust that every member of the old class will register a vow that nothing but death itself will be allowed to interfere with his attendance at the fortieth anniversary; finally I wish to express my sincere thanks to our Alumni historian, Dr. Bedell for the aid he has courteously tendered and so cheerfully given me in preparing this class history.

From the following members no reply has been received: Charles Barney, Milford, N. Y.; Martin J. Dwyer, New York City, N. Y.; William F. Gardner, New York; Charles A. Gillette, Burlington, Colo.; Walter D. Hasbrook, Kingston, N. Y.; Henry A. Jendrault, Dover, N. H.; Geo. L. Johnson, Troy, N. Y.; Louis N. Lanehart, Hempstead, N. Y.; Alfred M. Leonard, Cicero, N. Y.; John F. Rielly, Rensselaer, N. Y.; John H. Skillicorn, Albany, N. Y.; Theobald Smith, Harvard Medical School; David H. Strahan, Pewano, Mich.; John H. Stevens, West Winfield, N. Y.

NECROLOGY.

The following members of the Class of 1893 have answered the last summons and joined the great and silent majority:

WILL B. AMBLER, New Lebanon, N. Y., April 12, 1887.

LOURIE ASHTON, Hoosick Falls, N. Y.

WILLIAM W. BETTS, Los Angeles, Cal., June 15, 1893.

CHARLES BOLZ, Pasadena, Cal., February 2, 1908.

GEO. A. BRADLEY, Troy, N. Y., April 1910.

PETER F. CURLEY, Newport, R. I., December 13, 1900.

RUSSELL J. DIMON, Hastings, N. Y., March 28, 1911.

JOSEPH EMERSON, Whitehall, N. Y., January 1897.

JAMES G. ENTWISTLE, Chicago, Ill., September 1911.

FRANK H. FISK, Albany, N. Y., January 22, 1911.

W. ST. CLAIR GIBBS, Hyde Park, Pa., July 1893.

FRANKLIN B. HAYES.

NEWTON E. HEATH, Lee, Mass., July 7, 1911.

EDWIN KARNER, Mill River, Mass., December 20, 1897.

FRANK KUNKER, North Chatham, N. Y., March 25, 1909.

J. C. LA DOW, Mechanicville, N. Y., 1901.

FRED L. LA DUE, Alburgh Springs, Vt.

JOSEPH L. SMITH, May 12, 1897.

ALLEN R. THOMPSON, Troy, August 22, 1903.

JOHN W. VAN PATTEN.

THEODORE F. VAN ALLEN, New York, October 29, 1902.

GEO. B. WHIPPLE, Chicago, Ill.

Dr. R. RUIZ ARNAU, San Juan, P. R., writes: "I wish to state that I am a graduate of the Central University of Madrid, Spain, and also of the Albany Medical College, which I consider a great honor. I am very sorry not to be able to take part in so agreeable reunion of old friends with so pleasant an object. Please consider me, however, as a new professional colleague and friend situated here in San Juan, Porto Rico, 46 Allen St., at your service."

Dr. W. F. GARDINER, New York City, writes: "I had hoped that I might be present at the reunion of the Class of '83 but matters have come up that render it impossible for me to get away. I have not been in practice since 1910 when I removed from Brooklyn to New York City to take charge of my brother's estate who died suddenly making me executor and trustee of the residuary estate. I am sorry that I cannot be with you and wish to be remembered cordially to all of my classmates."

Dr. H. L. ODELL, Sharon Springs, N. Y., writes: "A brief sketch of the first twenty years of my practice is on file with the Historian. For about seven of the last ten years I lived in Syracuse. An unbroken family circle; a pleasant home in a beautiful part of the city; many delightful friends in the neighborhood; the medical profession and the church; membership in the Academy of Medicine and the Onondaga County Medical Society; access to an excellent medical library, a good and growing practice and superior educational advantages for my daughters, made that city for me in these and other respects ideal but failing health compelled me to locate elsewhere. On Malden-on-Hudson we spent an otherwise very pleasant year but as my health did not improve I relocated at Sharon Springs where I was most kindly welcomed and where I have been gradually regaining my former health and practice. Syracuse University gave two of my three daughters the degree of Ph. B. and one of them has since earned her Master's degree. I have here a good practice. Am Health Officer, Secretary Schoharie County Medical Society, member American Medical Association, Sharon Springs Lodge No. 624 F. & A. M., trustee Sharon Springs Free Library; trustee Sharon Springs M. E. Church; Secretary and Treasurer Local Board of Managers Boy Scouts."

Dr. THEOBALD SMITH, Harvard University Medical School, Boston, Mass., writes: "I know that it would give me great pleasure to attend our thirtieth anniversary and meet my still active classmates. I have

had so much traveling to meetings this year that I am behind in my work and not very well. However, I shall not give it up just yet."

Dr. M. TEN BRINK, Brooklyn, N. Y., writes: "I was engaged in general practice first in Troy and afterwards in New York and Brooklyn. Have been examining physician for the Holland Society for the last twenty-five years. Married an Albany girl and have three daughters who are the sunshine of our lives. On the whole have found the practice of a physician rather responsible and to do your duty towards your patients the best policy is do always what is right."

Dr. W. S. DONNELLY, Wayville, N. Y., writes: "I had hoped and expected to be present at the class reunion but a matter that I can either evade nor postpone demands my presence elsewhere. I would suggest that you give the history to Dr. Odell to be read by him at the class reunion. I name Dr. O'Dell because of the interest he has taken in the matter of the class anniversary. Again expressing my disappointment at my inability to attend, I remain."

CLASS OF 1893.

Reported by Dr. C. W. HAMM, Troy, N. Y.

Dr. A. W. HEDDEN, Syracuse, N. Y., writes: "After graduation I spent the summer of 1893 in looking up a location and finally decided on Syracuse. I opened my office on September 8, 1893, on Warren St., and have been within three blocks of my original location ever since. On January 24, 1895, married Miss Ella Mae Yarwood. Have no children. Have enjoyed my work; been very successful and trust I have been of some benefit to suffering humanity. I now hope to be with the old class on the 27th, if unable to get there give them my best regards."

Dr. G. H. JANES, Westfield, Mass., writes: "If something does not break I shall be with you on the 27th. Have all the business I can care for and am attending physician to Noble Hospital as well as medical examiner for Hampden County."

Dr. T. W. JENKINS, Albany, N. Y., writes: "Twenty years having rolled around since we left our Alma Mater together. During all this time I have been uniformly successful and happy; have practised in Albany continually and have been connected with the teaching force of the College in a minor way continually. No promotion so resigned and am now giving my spare time to laboratory work. Have taken post-graduate courses in New York, London, England and Munich in Germany. Am married but have no children. Our home will be open house for any of the Class of '93."

Dr. W. H. LAUGHLIN, Milltown, N. B., writes: "I had hoped to be in Albany at our twentieth anniversary but am afraid I will not be able to get away. The past twenty years have been very short to me. It seems but yesterday since I received my sheepskin. After graduation, I located in Milltown and have enjoyed a successful practice here ever since. In 1898 I took a post-graduate course of four months at McGill, Montreal, and in 1910 spent a very few profitable weeks at the Albany Hospital. I was present at the annual banquet and met a few of my classmates that evening. I am on the staff of the Chipmen Memorial Hospital here, am Health Officer of the town of Milltown and Chairman of the Milltown Board of School Trustees. I have always been active in masonry and am a member of the Grand Lodge of New Brunswick. My wife and family are well and my children two boys and two girls are all grown up. As for myself I am yet to have my first day's sickness. Wishing all the Class of '93 every success and hoping to see a new College building the next time I visit Albany."

Dr. SAN C. PO, sends word from Burma that he has shared fairly in his professional life where he is practicing at Bassein. He has two sons in America, at the Hebron Academy, Hebron, Me., one of whom will take his course in medicine in Albany. Dr. Po sends his kindest regards to all the members of his class.

Dr. FLAVIUS PACKER, Riverdale, N. Y., writes: "My first position was on the staff of the St. Lawrence State Hospital where I remained for three years, when I was appointed second assistant at the Rochester State Hospital and remained there for about three years. Following this I was first assistant at Matteawan. I left Matteawan to accept the position of Chief Examiner in Lunacy for the City of New York, in charge of Bellevue Pavilion and after three years took up private institution work. Eight years ago I established a private institution in the upper part of New York City and we now have a very attractive plant on the west side of Van Cortlandt Park. This sanitarium is in the city of New York also. Quite recently we bought a farm at Pawling, N. Y., where we hope to have a similar colony. You will see that I have followed my original bent—mental diseases. The sanitarium has been reasonably successful and for the most part I had three good meals a day. I am sure that all the boys have been successful as well as myself."

Dr. M. S. REID, Coeymans, N. Y., writes: "After practising eight years at Indian Fields, I came to Coeymans, my present location. Am married and have two fine boys."

Dr. C. J. ROBINSON, Northville, N. Y., writes: "After leaving College, I was at St. Peter's Hospital for one year. At the expiration of my term, I began practice at this place which I have continued to the

present time. I have been Town Supervisor for six years and Chairman of the Board of Supervisors for three years, in the past. I am at present, President of the Village where I reside. Hoping to have the pleasure of meeting you on the 27th."

Dr. THOMAS RYAN, Albany, N. Y., writes: "After graduating I located at No. 47 Eagle street, this city, remaining there until May, 1910, when I moved to my present location 74 South Swan street. I reside at 921 Madison avenue. I am doing a general practice and am getting along very well. I married Elizabeth McG. Mills in July, 1907. I met with a sad loss in her death last February. We had no children. Will be glad to see my old classmates again."

Dr. L. VAN HORN, Hudson, N. Y., writes: "Began practice September, 1893, at Coxsackie, N. Y., and after a few years of success and ambition for a broader field, so removed to Hudson, N. Y., in November, '99, where I am still located and have established a profitable and agreeable clientele. Have accumulated a good helpmate and two healthy children and sufficient means to provide for their ordinary wants. Hold a position on the staff of the City Hospital and have been honored by my fellow citizens to the extent of having been twice elected to the office of Mayor of the city."

Dr. F. D. VICKERS, Deming, New Mexico, writes: "July, 1893, I located in Canajoharie, N. Y. Was married to Katherine Gates 1895. Dr. H. W. Vickers, my brother was partner with me for three years following. 1903 he then moved to Little Falls, N. Y. 1907 had misfortune to lose my wife. We had one son who is now 17 years old. In 1911 I moved to Little Falls and practiced in partnership with my brother. My health has not been very good this past year and a half. Have been in New Mexico for the past six months trying to absorb some ginger from the sunshine. With best wishes to all the fellows, I am."

Dr. VAN GAASBECK, Kingston, N. Y., writes: "June, 1893, I began the practice of medicine at West Shokam, N. Y., a village of 500 population now taken by New York City for water supply. In 1895 suffered the loss of right arm. In 1900 began practicing at Kingston, N. Y., have taken up post-graduate work in New York City and am doing special work in 'pediatrics.' The profession has been one of interest and satisfaction to me. With the old 'Alma Mater' still in view and instructions which I received while under her wing, I am."

Dr. P. G. WALLER, New Baltimore, N. Y., writes: "I am glad to state I have enjoyed the practice of medicine for the past twenty years and have never regretted the effort of acquiring my degree. I located in this place in November, '93 after a summer of post-graduate work in

Philadelphia and have been able to make a comfortable living from my village ever since. Have a wife and three children and hope the two boys may some day desire to study medicine. Trust I will have the pleasure of meeting many of the '93 boys on 'Commencement Day.' Surely we should think enough of our old college to return once in twenty years. With best regards, I am."

Dr. C. W. HAMM, Troy, N. Y., writes: "Am located on Pawling avenue, Troy, N. Y., enjoying a general practice. Have one son who is attending Williams College."

THE CLASS OF 1903.

Mr. President and Members of the Alumni: The Class of 1903 sends greetings. We graduated with thirty-two members. Twenty-nine are still well and alive. Three have gone to their reward.

Letters were sent to all and histories obtained from all but four who did not respond.

A very enjoyable reunion dinner was given to the members of the class by our classmate Dr. James N. Vander Veer at the Hotel Ten Eyck on Monday evening, May the 26th, 1913.

This was an occasion that will long be remembered by all of the nineteen members present.

Respectfully submitted,

SYLVESTER C. CLEMANS,
Historian.

Dr. S. H. BASCH, 311 East 86th St., New York. Immediately following my graduation I was appointed assistant physician at the Marshall Sanitarium at Troy, N. Y., which position I held for ten months and left there owing to my appointment as an assistant physician to the Manhattan State Hospital at Ward's Island, New York City.

After a service of about three months at the above hospital I received an appointment as associate receiving physician in the Psycopathic Department at Bellevue Hospital at which post I remained until September, 1905, at which time I left to go into private practice in New York City.

Owing to a minor ailment which required a dry atmosphere I was compelled to leave the city and I started to practice at Rhinebeck-on-the-Hudson at which place I remained about three years.

In 1908 having entirely recovered from my rheumatic attack I returned to New York to again establish myself here confining my practice entirely to the ear, nose and throat.

I have served as assistant surgeon to the Mount Sinai and Sydenham Hospitals and at present am on the visiting staff of the Manhattan Eye, Ear and Throat Hospital in the nose and throat departments.

I belong to several medical societies and two professional clubs. During the last ten years away from Albany I have enjoyed life, have seen quite a bit of the world including three trips to Europe and one to South and Central America.

I am still unmarried and no future prospects.

F. E. BOLT, M. D., East Meredith, N. Y. I located at East Meredith, N. Y. after graduating, where I have been doing a general practice ever since.

Have taken post-graduate work at the New York Poly-Clinic Medical School and Hospital.

Am member of A. M. A. Have been Health Officer of town for eight years. Am married and have one daughter.

J. H. BRANAN, M. D., 289 Clinton avenue, Albany, N. Y. Born January 20, 1880, at Albany, N. Y.

Education—Albany Public Schools, State Normal College, Albany Medical College, Class of 1903.

General practice in Albany, N. Y., to date.

Married Miss Josephine Condon in 1909.

Member—Albany County, New York, State and American Medical Associations.

HARRY M. CHANDLER, M. D., South Orange, N. J. After graduating located at South Orange, N. J. Was interne for one year at the Orange Memorial Hospital.

Did post-graduate work at Cornell Medical College doing special work in genito-urinary clinic.

Held position as assistant on the surgical staff of Orange Memorial Hospital. Am secretary of the dispensary staff. Am member of County, State societies and the American Medical Association.

SYLVESTER C. CLEMANS, M. D., 20 Spring street, Gloversville, N. Y. Located at Gloversville, N. Y. after graduation.

Went to Barre, Vt. in 1905 staying until 1907 when I returned to Gloversville, N. Y., where I have since practiced.

Have been engaged in general practice.

Married and have one son.

Have been city physician and held positions on staff of City Hospital and Gloversville Dispensary.

Member of State and County and local societies.

HERBERT T. CROUGH, M. D., Mohawk, N. Y. Graduated from Albany Medical College 1903.

Spent nine months at Gloucester (Mass.) Emergency Hospital.

Then practiced general medicine nine months at Gloversville, N. Y. Left here in 1904 and have been practicing medicine and surgery for

the past nine years at Mohawk, Herkimer County, N. Y. Have been Health Officer of the Town of German Flats, Herkimer County, N. Y., for the past eight years.

A. J. DOUGLAS, M. D., Westfield, Mass. Spent two years in Albany City Hospital as interne.

Then located in Westfield, Mass.. practicing both medicine and surgery. Have taken post-graduate courses at the Harvard Medical College.

Held position of attending surgeon to the Noble Hospital, Westfield, Mass.

Married.

Dr. L. L. DULBERGER, 532 W. 111th street, New York. After leaving college I at once took my State Board which I passed successfully and immediately started in the practice.

I must say that I made a grand success. My average income is about \$6,000 yearly. I was connected with the Mt. Sinai Hospital Clinic for a period of seven years as first assistant Internal Department Clinical work.

I married a Miss Rae Brown in the year 1905 and am the proud father of two husky boys. At the present time I am connected with the Suydenham Hospital Clinic of which I am chief, expecting very shortly to be appointed as attending physician at the hospital.

E. M. GRIFFITH, M. D., Chadwicks, N. Y. The 18th of May I took my appointment at Faxton Hospital, Utica, where I stayed until June, 1904, receiving excellent instruction and experience. Also one other thing which has helped as much as anything, that is, confidence to go ahead.

July, 1904 I located at Chadwicks, a suburb of Utica, a live mill town, and can say I have been busy ever since doing general practice.

Was married June 14, 1906, to Miss Anna Bigelow of Utica. We are blessed with two children, Roger age 5 years and Esther age 2 years.

My practice has been the ordinary run of medicine and surgery. Have had my share of hard and unusual cases both medical and surgical. My obstetrical work has been larger than falls to the lot of the ordinary man.

In civil life I participate somewhat in local politics. At present hold the office of school director. Have been member of School Board five years and Chairman of Board three years. Past Master of Auxable Lodge 664 F. A. M. Belong to several medical societies and have appointment on the medical and obstetrical staff of Faxton Hospital, Utica, N. Y. Also examiner for several of the Old Line Insurance Companies and one Industrial Company. We have managed to hold on enough of the "coins of the realm" to own our home and try to make ourselves useful citizens in the community in which we live.

C. R. HOFFMAN, M. D., 1 Culvert street, Glens Falls, N. Y. After graduation I entered the Albany Hospital for one year's service. In June, 1904, I located in Glens Falls, N. Y., and have been here continuously.

Have served as City Physician and am one of the Assistant Attending Surgeons to the Glens Falls Hospital.

Dr. FRANK KEATOR, 103 St. James street, Kingston, N. Y. After graduation, I served one year upon the house staff of the Albany Hospital. After leaving the hospital, I was resident physician at the New York State Industrial School at Rochester for one year and in September, 1905, located in Kingston, N. Y., where I have since practiced.

In September, 1906, I married Miss Jessie Helen Laing of Albany. We have one child, a daughter, five years of age.

I am pursuing general practice and am Attending Surgeon at the Kingston City Hospital, Surgeon for the New York Central Railroad, the Ontario and Western Railroad and Ulster County Jail physician.

CHARLES R. MARSH, M. D., 203½ Main street, Oneonta, N. Y. On receiving my degree of M. D. in 1903 very profitably spent a year in the Troy City Hospital as house physician and surgeon, then located in South Valley for general practice. After four months of extensive country driving decided for larger fields eventually locating in Oneonta, N. Y., where I have been working especially in the surgical field. At the present time am on the surgical staff of Fox Memorial Hospital and member of Otsego County and State Medical Society. In 1905 married to Jessie M. Traber of South Valley, N. Y.

Dr. MILES A. MCGRANE, 91 Fourth street, Troy, N. Y. Studied and served as interne at the New York Poly-clinic Hospital, also interne at New York Infant Asylum. Started in practice at Troy, N. Y., in December, 1903. Followed general practice for a few years and gradually drifted into the practice of eye and ear, which I have done exclusively for the last three or four years.

At present I am Assistant Ophthalmologist and assist at the Troy Hospital, also at St. Peter's Hospital of Albany and South End Dispensary of Albany. I am Ophthalmologist and assist at the Maternity Hospital of Troy, N. Y. Married in July, 1908, and have one girl, three years old.

Dr. J. C. MERCHANT, Pine Plains, N. Y. After graduation I was interne at Ellis Hospital, Schenectady, for one year. I practiced in Brooklyn nearly five years and on account of poor health I left the city and came here to the country where I have practiced since.

I was married in 1907 and have one child. I have a good practice and good health, and am enjoying life.

A. R. MILLER, M. D., Box 106, East Greenbush, N. Y. Interne at St. Peter's Hospital, Albany, 7 months, winter of 1903-04. Private practice in Rensselaer, N. Y., three years, telephone cable splicer for nearly a year in Mobile, Alabama and Augusta, Ga. Telegraph operator for four years in Vermont and New York. Game farmer since then located at East Greenbush. Married September 1912.

WILLIAM L. MULCAHY, M. D., Far Rockaway, N. Y. At present in Europe.

MILLARD F. SHAFER, M. D., Gloversville, N. Y. Graduated from Albany Medical College in 1903. Practiced at Grafton, N. Y., for one year; located at Richmondville, N. Y., 1904 and practiced there until October, 1912, when I moved to Gloversville.

E. FORREST SIBLEY, M. D., 80 Pearl street, Kingston, N. Y. Can put in a very few words all that is necessary to say regarding my life in the decade that has so nearly gone.

From 1903 to 1904 served as interne Albany Hospital, from 1904 to 1905 assistant Bender Laboratory, and from 1905 to 1908 was assistant to Dr. Arthur W. Elting.

Located in Kingston in the spring of 1908 and have been engaged in the practice of general surgery since then.

Member surgical staff Kingston City Hospital. Unmarried.

Dr. F. T. SMITH, 1712 Fifth avenue, Troy, N. Y. After finishing my internship at Samaritan Hospital I began the practice of medicine in this city and have continued to practice here. Was married in 1905 to Julia E. Durant of Watervliet. Doing general practice and major surgery.

GEORGE H. SMITH, M. D., 317 Ann street, Little Falls, N. Y. After graduation I returned here to my native city where I was bred and born, for the simple reason that I had not a solitary sou to go elsewhere. I opened an office at once on borrowed money, paying the same off before the three months elapsed from the proceeds of the practice. I consider myself successful and fortunate thus far in my life's work to which I am deeply attached. I was appointed City Physician and Police Surgeon in 1904 and held the office for six consecutive years resigning the same in order to be nominated for the office of Coroner of Herkimer County, to which office I was duly elected and still hold. I was married August 31, 1904, to the sweetheart of my college days and she is still the same to me having blessed me with two children, Agatha and Geo. Gordon.

Fraternally I am a Master Mason. Royal Arch, and Knights Templars, Elks, Odd Fellows, Knights of Pythias, etc. I am the examiner for the leading companies of life insurance both old line and fraternal. ■

consider myself a general practitioner although have a leaning for surgery of which I do considerable and taking everything all in all I have no kick coming.

Dr. MARK O'MEARA, Kingston, N. Y. Accepted a position as Surgeon for D. & H. R. R. Co. at Standish where I remained two years.

Came to Kingston 1906 where I have since been. Am at present Surgeon-in-Chief to the Benedictine Hospital, Kingston, also vice-president and member of the board of managers of County T. B. Hospital, Kingston. Two years ago was elected President of the Third District Branch of State Medical Society.

My most valuable worldly goods are a wife and two children.

THOMAS O'CONNOR, M. D., Troy, N. Y. Just a week or so following graduation, I was appointed interne at the Troy Hospital for a year beginning July 1, '03. Having finished my term of service there and feeling woefully deficient in obstetrics, I decided to take a post-graduate course at the Lying-in Hospital of the City of New York. This course I started July 15, '04. On August 1st I tried the examination for appointment to the staff there. I was successful and my term of service started immediately. On completion of my duty there. I began practice in my home town, Troy. At first the going was rather hard, but by dint of perseverance and "sticktoitiveness" I have been doing better every year until to-day. I feel that I am getting my share. Am specializing in surgery and obstetrics. Am Visiting Obstetrician to St. Joseph's Maternity Hospital, Assistant Gynecologist to the Troy Hospital and Assistant Surgeon to the House of Good Shepherd. Am married and have one child, a boy.

VIRGIL D. SELLECK, M. D., 44 Day street, Glens Falls, N. Y. Upon graduating I immediately located in Glens Falls and have been here ever since. During that time I have held different city offices, have done post-graduate work in New York City. Do a general practice and also what surgery comes my way. Am member local County and State Medical Societies and the A. M. A. Am member staff Glens Falls Hospital.

Am married and have one daughter.

Dr. I. E. VAN HOESEN, Coxsackie, N. Y. Entered Albany Hospital June, 1903, to March, 1904. Left to take up practice at Coxsackie, N. Y., where I have been engaged in active practice since that time.

Married Marie Gauger of Albany, N. Y., in September, 1906. One child born June 19, 1908, Willis Macdonald Van Hoesen.

Elected Coroner of Greene County for a term of three years in 1912. Health Physician of Village of Coxsackie, N. Y., 1912, for a term of four years.

Member of State and County Societies.

J. N. VANDER VEER, M. D., 28 Eagle street, Albany, N. Y. Immediately upon graduation I complied with the State requirements and obtained a license to go forth with my pill box, prepared to kill or cure, but was restrained for a year through the good luck of having obtained an appointment as interne in the Albany Hospital, serving as a junior under the then existing rules. It was here that I came in contact quite intimately with Dr. MacDonald, and my admiration and friendship for him grew day by day which maintained almost up to the time of his death. I also had the pleasure of coming in contact and of learning much from those who were in attendance on the hospital staff, and to them I believe I owe much of the incentive which has pushed me on in my work.

Toward the close of the year, in a conversation with my father and Dr. MacDonald, the desire was created to do some post-graduate work abroad, and shortly after leaving the hospital I set sail with Dr. MacDonald for the continent and spent a month traveling about with him and seeing the various masters in their arenas, before settling down in Berlin to take up the more serious work which I had planned. Many are the anecdotes I could tell you of my experiences in Berlin, and later in Vienna and Berne, but these shall come out at our class banquet. I stayed in Europe until the middle of December, 1904, when I thought it best to return home and succeed my brother as assistant to my father, while the former took six months' vacation.

The call of the wild however was too great, so in September, 1905, I once more set sail with the three cities of Berlin, Vienna and Berne as my objective point, and with my course of study already planned and largely arranged for in advance. The names of the teachers under whom I studied would not, I fear, be interesting to our class, but two among them stand out most prominently—Prof. Nitze of Berlin, and Prof. Theodor Kocher of Berne. These men were more than teachers to me, for their ways and personality were lovable in whatsoever they did. March, 1906, saw me in attendance upon the Fourteenth International Congress of Medicine at Lisbon as one of the delegates from our State Medical Society, where I met a number of Europe's chief physicians and surgeons, and listened to much that was of interest in our chosen branch of life. At this time, and being so near by, I visited Gibraltar and Tangiers and so can truthfully say that I have had my feet on African soil.

Upon my return home in the spring of 1906 I took up the practice of general surgery, attempting to limit myself however, as much as possible, to the diagnosis and surgical treatment of lesions of the genito-urinary tract.

In December, 1908, I was married, and from this marriage there has issued a fine bouncing boy whom I am somewhat uncertain as to advising taking up the study of medicine, or not. In a measure mine has been a prosaic life, though I have tried, so far as in me lies, to

become interested in general and civic duties, and to keep as sweet a temper as possible for one who practices medicine.

It has been my good fortune to have been appointed a lecturer on surgical technique, as well as an instructor in genito-urinary surgery, and I find that some of my greatest pleasures at the present time consist in answering letters of the men who have graduated since I have received these appointments, and who have been my students, advising them in questions of puzzling conditions.

As windy as ever, I have found time to write something for medical literature in various articles, and I trust that I have disseminated some ideas of value which, while they may not become standard works of reference, at least may have helped some victim to gain his health through the medium of his physician.

The Nominating Committee submitted the following report by its secretary, Dr. Traver:

For President

Dr. GEORGE H. JANES ('93), Westfield, Mass.

For Vice-Presidents

Dr. GEORGE WALRATH ('05), Mariner's Harbor, N. Y.

Dr. THURMAN A. HULL ('05), Troy, N. Y.

Dr. ISRAEL M. SLINGERLAND ('83), Fayetteville, N. Y.

Dr. JOHN I. COTTER ('04), Campbell Hall, N. Y.

Dr. SYLVESTER C. CLEMANS ('03), Gloversville, N. Y.

For Recording Secretary

Dr. J. MONTGOMERY MOSHER ('89), Albany, N. Y.

For Corresponding Secretary

Dr. JAMES N. VANDER VEER ('03), Albany, N. Y.

For Treasurer

Dr. ROBERT BABCOCK ('84), Albany, N. Y.

For Historian

Dr. ARTHUR J. BEDELL ('01), Albany, N. Y.

For Members of the Executive Committee (term three years)

Dr. JOSEPH LEWI BENDELL ('07), Albany, N. Y.

Dr. WILLIAM J. NELLIS ('79), Albany, N. Y.

Dr. JOSEPH A. COX ('01), Albany, N. Y.

Dr. OTIS Z. BOUTON ('98), Fultonville, N. Y.

On motion of Dr. Tucker, the report was accepted and the Recording Secretary was directed to cast one ballot for the names contained in the report. The Recording Secretary then read these names and President Root declared the members named in the report duly elected officers of the Association for their respective terms.

Dr. Albert Vander Veer then presented the plans and described the buildings proposed for the new college.

Announcements of the program of the day, the commencement exercises and alumni dinner having been made, and no further business appearing, the Association adjourned.

COMMENCEMENT EXERCISES.

The eighty-second commencement exercises of the Albany Medical College were held at Odd Fellows' Hall, on Tuesday afternoon, May 27, 1913, at three o'clock, in the presence of a large audience. Samuel B. Ward, M. D., Dean of the College, presided, and upon the stage were seated the members of the Faculty, officers of the Alumni Association and prominent citizens.

The following was the

ORDER OF EXERCISES.

DEAN SAMUEL B. WARD, M. D., PRESIDING.

Music—Grand March, "Aida".....	<i>Verdi</i>
Prayer.....	REV. ALEXANDER H. ABBOTT
Music—Pilgrims' Chorus, "Tannhauser".....	<i>Wagner</i>
Essay.....	RAY HOLLY HUMPHREY
Music—Morceau "Humoreske".....	<i>Dvorak</i>

PRESENTATION OF CANDIDATES FOR DEGREE BY DEAN WARD

CONFERRING DEGREES.

BY CHARLES ALEXANDER RICHMOND, D. D., LL. D.,
Chancellor of the University.

Music—Intermezzo "Valse Poudrée".....	<i>Popy</i>
ADDRESS TO THE GRADUATING CLASS.	

Rev. J. VALDEMAR MOLDENHAWER.

Music—Morceau, "Vision d' Automne".....	<i>Joyce</i>
Valedictory.....	MICHAEL EDWARD NOLAN

REPORT ON PRIZES AND APPOINTMENTS.

JOSEPH D. CRAIG, M. D.

Music—Finale, "Silv'ry Bells".....	<i>Botsford</i>
(HOLDING'S ORCHESTRA.)	

The Graduating Class was as follows:

William Alfred Ackroyd, B. S.	East Schodack, N. Y.
Wesley Mason Adams	Davenport, N. Y.
Morris Bryan Beecroft	Schaghticoke, N. Y.
Orvis Adoniram Brenenstuhl	Petersburg, N. Y.
David Truman Brewster, Jr., M. D.	Montrose, Pa.
John Leonard Byrnes	Schenectady, N. Y.
Garrett Marcellus Clowe	Schenectady, N. Y.
Walter Roy Liddel Coakley	Buffalo, N. Y.
Rufus Baker Crain	Richfield Springs, N. Y.
Nathaniel Crost	Saratoga Springs, N. Y.
Burke Diefendorf	Fort Plain, N. Y.
Jacob Drooz	Albany, N. Y.
Dwight Guilford Dudley	Maine, N. Y.
Paul Charles Fleri	Brooklyn, N. Y.
Hugh Vincent Foley	Watervliet, N. Y.
George Victor Genzmer	Pittsfield, Mass.
Elmer Ray Gladstone	Shavertown, N. Y.
Hugh Sewell Gregory	Horseheads, N. Y.
Raymond Hensel	Buffalo, N. Y.
Harry Smith Howard	Albany, N. Y.
Alson Joy Hull	Williamstown, Mass.
Eugene Fellner Hull	Berlin, N. Y.
Ray Holly Humphrey	Rensselaer, N. Y.
William James Jones	Amsterdam, N. Y.
Whitney Hotaling Joyce	Unadilla, N. Y.
Arthur Saul Katzenbogen	Brooklyn, N. Y.
William Herman Ladue, B. S.	Albany, N. Y.
Roy Ludlum Lippincott	Campbell Hall, N. Y.
John Wellington Mambert	Churchtown, N. Y.
Schuyler McCulloch Martin	Albany, N. Y.
Raymond Francis McAloon	Keeseville, N. Y.
Gaetano Giuseppe Nicosia	Brooklyn, N. Y.
Michael Edward Nolan	Eagle Bridge, N. Y.
Elmer Harrison Ormsby	South Glens Falls, N. Y.
John Swart Parker	Oneonta, N. Y.
Robert Edward Plunkett	Troy, N. Y.
William Carl Rausch, Jr.	Albany, N. Y.
Conrad Aloysius Rissberger	Albany, N. Y.
Jacob Schneider	Brooklyn, N. Y.
Ernest Charles Schultz	Schenectady, N. Y.
Woodard Shaw	West Hebron, N. Y.
Walter Joseph Smith	Port Leyden, N. Y.
Axel Fridolf Swanson	Southampton, Mass.
John Daniel Tidaback	Bloomfield, N. J.
Harold Dwyer Tobin	Chateaugay, N. Y.
Guy Brownell Van Alstine	Canajoharie, N. Y.

Frank John Williams.....Utica, N. Y.
Charles Wesley Woodall.....Schenectady, N. Y.
and
Darwin Alfred Bruce.....Albany, N. Y.,
who, not being of legal age, will receive his diploma in 1914.

Dr. Craig presented the prizes. He read a report on the Vander Poel prize, endowed by Mrs. Gertrude W. Vander Poel, in memory of her husband, the late S. Oakley Vander Poel, for many years a professor in the college, stating that the prize, consisting of a clinical microscope and accessories, offered to the senior student passing the best bedside examination in general medicine, has been awarded to Dr. Walter Joseph Smith, with honorable mention of Dr. Elmer Harrison Ormsby.

The prize offered by Drs. Vander Veer and Elting for the best report of the surgical clinics was awarded to Dr. Elmer Harrison Ormsby. For the second best report of these clinics, the prize offered by Drs. Morrow and Traver was awarded to Dr. Charles Wesley Woodall.

The prize, consisting of an ophthalmoscope, offered by Dr. Merrill for the best final examination in ophthalmology, was awarded to Dr. Michael Edward Nolan.

The Townsend Physiology prize endowed by the late Professor Franklin Townsend, Jr., M. D., was awarded to Mr. Clarence F. Rinkle, for passing the best examination in physiology at the end of the first year of study. Honorable mention to Mr. John L. Hemstead.

Dr. Boyd's prize to the student passing the best final examination in obstetrics was awarded to Dr. John Wellington Mambert.

The prize, consisting of a case of surgical instruments, offered to the senior student passing the best final examination, by Dr. W. J. Nellis ('79), in memory of his brother the late Dr. T. W. Nellis ('81), was awarded to Dr. Wesley Mason Adams. Honorable mention to Dr. Ray H. Humphrey.

Dr. Lempe's prize for the best report of the lectures on second year Minor Surgery was awarded to Mr. Archibald A. Walker.

The Daggett prize, consisting of sixty dollars, for the best "anatomical specimens," was awarded to Dr. Walter Joseph Smith.

The Daggett first prize for the best "deportment irrespective of scholarship," consisting of sixty dollars, was awarded to Dr. Rufus Baker Crain, and the second prize, consisting of thirty dollars, was awarded to Dr. Axel Fridolf Swanson.

Appointed Essayist for 1914, William P. Howard; Alternate, John Waluk.

The following hospital and laboratory appointments were announced:

HOSPITAL APPOINTMENTS.

Albany Hospital: Wesley M. Adams, Elmer H. Ormsby, Jacob Drooz, Rufus B. Crain, Nathaniel Crost, Paul C. Fleri, Walter R. L. Coakley.

St. Peter's Hospital: George V. Genzmer, Morris B. Beecroft, Burke Diefendorf, Conrad A. Rissberger.

Samaritan Hospital, Troy: Alson J. Hull, Guy B. Van Alstyne, Schuyler M. Martin.

Troy Hospital: Darwin A. Bruce, Hugh V. Foley, Michael E. Nolan.

Ellis Hospital, Schenectady: William H. Ladue, John S. Parker, Ernest C. Schultz.

Homeopathic Hospital: Axel F. Swanson, John D. Tidaback, Harold D. Tobin, Raymond F. McAlloon.

Faxton Hospital, Utica: Elmer R. Gladstone.

Saratoga Hospital: William A. Ackroyd.

St. Elizabeth Hospital, Utica: Frank J. Williams.

St. Luke's Hospital, Newburgh: John W. Mambert.

Lake View Sanitarium, Troy: Jacob Schneider.

Mohansic State Hospital, Yorktown: William J. Jones.

St. Joseph's Hospital, Far Rockaway: Raymond Hensel, William C. Rausch, Jr.

Physicians' Hospital, Schenectady: Charles W. Woodall.

St. Lawrence State Hospital, Ogdensburg: Hugh S. Gregory.

St. Francis Hospital, Hartford, Conn.: John L. Byrnes.

Floating Hospital, Boston: Harry S. Howard.

Eastern District Hospital, Brooklyn: Arthur S. Katzenbogen.

Gloversville Hospital, Gloversville: Woodard Shaw.

Holy Family Hospital, Brooklyn: Gaetano G. Nicosia.

THE ALUMNI DINNER.

The fortieth annual dinner of the Alumni Association was held at the "Ten Eyck," on Tuesday evening, May 27, 1913, at nine o'clock. About one hundred and fifty were present, including members of the Association, the guests, and members of the graduating class.

The retiring President, Dr. Arthur G. Root, acted as toastmaster and addresses were given by Chancellor Richmond, Rev. James S. Kittell, Rev. J. V. Moldenhawer, Dr. Albert Vander Veer, Dr. Samuel B. Ward, and Dr. Walter J. Smith.

Editorial

When i got home i fell down on the steps and mother and aunt Sarah came out and got me in the house and put water on my head and rubbed my hands, and the Docter came and said, well Joanna, children are a good deal of trouble and then he felt of my wrist and said hum, and then he looked at my tongue and said hum again, and then he pride open my mouth and looked down my throat and said hum, and then he pulled off my close and looked me over rite before mother and aunt Sarah and said well he aint spekled eny. then he said What have you given him Joanna and mother said nothing, and the docter said, all right give him some more, and mother said I haven't given him enything Docter, and then he walked around the room and picked up some things and looked at them and then he gave me some of the wirst tasting stuff i ever took. then he said i gess he will be better to-morrow, and then he looked at some more things and went home. I didnt sleep very well that nite but was auful hot and my head aked fearful. Mother was in my room every time i waked up, and Sarah too. next day i had the docter again he looked at some pictures and things and told mother to give me some more. i always feel better when the docter comes in. he don't scare a feller to death.

HENRY A. SHUTE.

The Real Diary of a Real Boy.



Inquiry into the vexatious problem of the relation between the so-called parasyphilitic diseases Syphilis of the Brain or General Paresis. and syphilis has been stimulated by the discovery of the syphilitic organism in the brains of paretics, and active interest in the question is again renewed. Noguchi and J. W. Moore have recently published, as a result of

their work, an article entitled "A Demonstration of Treponema Pallidum in the Brain in Cases of General Paralysis," which appears in *The Journal of Experimental Medicine* of February 1, 1913.

The authors report the results of examination for treponema pallidum on seventy paretic brains. In twelve out of the seventy specimens, the organisms of syphilis were found. The relationship of paresis to syphilis has been a topic of great medical interest. Kraepelin asserts "We can to-day declare with the greatest certainty that syphilitic infection is an essential for the later appearance of paresis." On the contrary, Nonne says, "At the outset I desire to make it clear that progressive paralysis is not a specific syphilitic disease of the brain." Among those who hold "without syphilis, no paresis," there are some who contend that paresis is nothing more or less than a particular form of tertiary syphilis. Kraepelin objects to this view on two principal grounds,—the distinctly greater interval between syphilitic infection and paresis as compared with that in cerebral syphilis and the refractoriness of paresis to antisyphilitic treatment. The occurrence of trypanosomes in the brains in cases of sleeping-sickness led the authors to search for the syphilitic organisms in paretic brains. Tissues from seventy such specimens were stained with the Levaditi silver method. The sections in most of the cases were taken from the first right frontal gyrus; in some, from the left hemisphere. The syphilitic organisms were found in twelve cases which were of undoubted general paralysis. Seven were of the cerebral type, and five of the tabetic. The post-mortem findings in the brain in every case were those of general paralysis. In none of the cases were there softenings and no gummatata were found either in gross or microscopically. The spirochaetae were found in all layers of the cortex with the exception of the outer, or neuroglia layer. There seemed to be no ratio between the number of the spirochaetae and the severity of the disease.

This discovery raises the question as to whether the so-called parasyphilitic or metasyphilitic conditions are in reality true syphilis, or an end-result, as has long been assumed. Further work in this line will be awaited with interest.

H. S. BERNSTEIN.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.
ABSTRACT OF VITAL STATISTICS, MAY, 1913.*Deaths.*

Consumption	15
Typhoid fever.	7
Scarlet fever.	0
Measles.	0
Whooping-cough.	1
Diphtheria and croup	0
Gripe.	1
Diarrheal disease	1
Pneumonia.	11
Broncho-pneumonia.	3
Bright's disease	21
Apoplexy.	3
Cancer.	13
Accidents and violence	7
Deaths over 70 years.	41
Deaths under 1 year.	14
<hr/>	
Total deaths	172
Death rate	20.24
Death rate less non-residents.	17.06

Deaths in Institutions.

	Non-Resident	Resident
Albany Hospital	13	11
Albany Orphan Asylum.	0	0
Child's Hospital	1	1
County House	1	3
Home for the Friendless.	1	0
Homeopathic Hospital	5	1
Hospital for Incurables.	0	0
Little Sisters of the Poor.	1	0
Public Places	1	3
St. Margaret's House.	3	4
St. Peter's Hospital.	4	5
Austin Maternity Hospital.	0	0
Albany Hospital, Tuberculosis Pavilion.	7	1
Labor Pavilion	0	0
<hr/>		
Totals.	37	29
Births.	146	
Still Births	3	
Premature Births	4	

BUREAU OF CONTAGIOUS DISEASE.

Cases reported.

Typhoid fever	76
Scarlet fever	6
Diphtheria and croup.....	22
Chickenpox.	16
Smallpox.	0
Measles	24
Whooping-cough.	0
Consumption.	33
	—
Total.	177

Contagious Disease in Relation to Public Schools.

	Reported.	Deaths.	
	D. S.F.	D. S.F.	
Public School No. 1.....	3	....
Public School No. 16.....	....	1	
Public School No. 20.....	1	....
Public School No. 21.....	2	....
St. Patrick's School.....	1	....

Number of days quarantine for scarlet fever:

Longest..... 21 Shortest..... 4 Average..... 13 2/16

Number of days quarantine for diphtheria:

Longest..... 44 Shortest..... 19 Average..... 31 ½

Fumigations:

Houses.....	55	Rooms.....	174
Cases of diphtheria reported.....	....	22	
Cases of diphtheria in which antitoxin was used.....	....	21	
Cases in which antitoxin was not used.....	....	1	
Deaths after use of antitoxin.....	....	0	

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive.	16
Negative.	19
	—
Total.	35

Living cases on record May 1, 1913..... 287

Cases reported during May:

By card. 28

Dead cases by certificate..... 6

— 34

Total. 321

Dead cases previously reported.....	9
Dead cases not previously reported.....	6
Removed.....	3
Duplicate.....	1
	— 19

Living cases on record June 1, 1913.....	302
Total tuberculosis death certificates filed during May.....	15
Out of town cases dying in Albany:	
Albany Hospital	1
Net city tuberculosis deaths.....	14

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	33
Number of new cases assigned.....	18
	—
Total.....	51
Disposition of old and new cases:	
Died.....	4
Hospital.....	14
Remaining under supervision.....	33
Number of visits.....	210

BUREAU OF PATHOLOGY.*Bender Laboratory Report on Diphtheria.*

Initial positive.....	21
Initial negative.....	160
Release positive.....	31
Release negative.....	174
Failed.....	46
	—
Total.....	432

Test of Sputum for Tuberculosis.

Initial positive.....	17
Initial negative.....	19
Total.....	36

BUREAU OF MARKETS.

Market inspections	115
Public market inspections.....	26
Fish market inspections.....	4
Slaughter house inspections.....	3
Packing house inspections.....	3
Hide house inspections.....	3
Rendering plant inspections.....	1

MISCELLANEOUS.

Mercantile certificates issued to children.....	21
Factory certificates issued to children.....	5
Children's birth records on file.....	26
Number of written complaints of nuisances.....	89
Privy vaults	10
Closets.	6
Plumbing.	13
Other miscellaneous complaints.....	60
Cases assigned to health physicians.....	91
Calls made	151
Number of dead animals removed.....	415

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR MAY, 1913.—Number of new cases, 176; classified as follows: Dispensary patients receiving home care, 5; district cases reported by health physicians, 3; charity cases reported by other physicians, 66; moderate income patients, 72; metropolitan patients, 30; old cases still under treatment, 157; total number of cases under nursing care during month, 333. Classification of diseases for the new cases: Medical, 49; surgical, 14; gynecological, 3; obstetrical under professional care, mothers 36, infants 36; eye and ear, 1; skin, 2; throat and nose, 1; infectious diseases in the medical list, 34. Disposition: Removed to hospitals, 28; deaths, 18; discharged cured, 109; improved, 35; unimproved, 44; number of patients still remaining under care, 99.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 4; nurses in attendance, 4; patients carried over from last month, 1; new patients during month, 4; patients discharged, 5; visits by head obstetrician, 2; visits by the attending obstetrician, 1; visits by students, 41; visits by nurses, 44; total number of visits for this department, 88.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,937; for professional supervision of convalescents, 439; total number of visits, 2,376; cases reported to the Guild by three health physicians, and fifty-six other physicians; graduate nurses 9, and pupil nurses 7 on duty.

Dispensary Report.—Number of clinics held, 88; new patients, 137; old patients, 314; total number of patients treated during month, 451. Classification of clinics held: Surgical, 11; nose and throat, 7; eye and ear, 15; skin and genito-urinary, 7; medical, 13; lung, 10; dental, 0; nervous, 1; stomach, 4; children, 12; gynecological, 8.

FOURTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.—Among the prominent speakers expected at the Fourth International Congress on School Hygiene at Buffalo, August 25th to 30th are the following notable delegates from abroad:

Prof. H. Griesbach of Mulhausen, Alsace, Germany, President of the First Congress held in Nuremburg in 1904.

Dr. L. Dufestal of Paris, France, Medical Inspector of the Paris Schools and Secretary-General of the Third International Congress on School Hygiene.

Dr. James Kerr of London, England, Member of the London County council, for many years an active leader in the field of medical inspection.

Dr. Otto Grennes, of Christiania, Norway Organizer of the Statistical Exhibit Department of Education, for the Norway Centenary Exhibition in 1914.

Dr. Ernesto Cacace of Naples, Italy, Professor in Pediatry, Royal University of Naples.

Professor L. V. Liebermann of Budapest, Hungary, Professor Hygienic Institute, Royal University of Budapest.

Dr. R. Kaz of St. Petersburg, Russia, Consulting and School Oculist.

Dr. Frederick Lorentz of Berlin, Germany, Member of the Society for School Hygiene, Berlin Teachers.

Dr. Weichardt of Erlangen, Germany, Bacteriological Research Laboratory.

Dr. J. Bayerthal of Worms, Germany.

Dr. J. Brandau of Cassell, Germany.

Dr. Marx Lobsein of Kiel, Germany.

Dr. Theodore Altschul of Prague, Germany, Sanitary Inspector.

Dr. D. E. Jessen, of Strassburg, Germany, International Commission on Mouth Hygiene.

Dr. Carnelio Budinich of Trieste, Austria, Architect.

Dr. Mathilde Gstettner of Vienna, Austria, Assistant Oculist, Vienna Polyclinic High School Teacher, and Secretary Austrian School Hygiene Association.

Dr. Leo Burgerstein, Professor of the Royal University of Vienna.

Dr. R. H. Crowley, of Bradford, England, Board of Education.

Dr. Cecil Reddie of the New School, Abbot's Bolme, England.

Dr. M. C. Schuyten of Antwerp, Belgium, Professor of the New College, Brussels.

Dr. Albin Lenhartson of Stockholm, Sweden, Director of Municipal School, Dental Clinic.

Dr. Hansen Hakonson of Trondhjem, Norway, Head Master School Hygiene.

Dr. Daumegon. Director of Health Department, City of Narbone, France.

HEALTH REFORM BILLS.—On May 17th, Governor Sulzer of New York signed the bill known as the Seeley-McDaniels bill which was passed

recently by the New York State Legislature, and is designed to carry into effect the recommendations of the special Public Health Commission appointed by the Governor last January. The chief provisions of the bill are as follows: A public health council is created to consist of the State Health Commissioner and six members appointed by the Governor, which shall have power to enact and amend the sanitary code. Three new divisions each in charge of a director (Child Hygiene, Public Health Nursing and Tuberculosis) are added to the Department of Health, and the six divisions (Administration, Sanitary Engineering, Laboratories and Research, Communicable Diseases, Vital Statistics, and Publicity and Education) already established are written into the statute. The State is to be divided into twenty or more sanitary districts, each under a sanitary supervisor who shall be a physician and whose duties are defined. The Health Commissioner is given a six years' term of office with an annual salary of \$8,000 and the health officers throughout the State are ensured a respectable compensation, and their duties are plainly defined. The regulations regarding the registration of cases of tuberculosis are to be more strictly enforced and health authorities are given control over "persistently dangerous and careless persons," afflicted with an infectious, contagious or communicable disease, the law providing for the commitment of such a patient to a hospital by a magistrate upon proof that he is a menace to the community.

The Governor also signed the Seeley bill giving the State Health Department increased powers over cold storage plants and the Foley bill providing for an inspection by the Health Commissioner of the kitchens of all hotels, restaurants and other public places.

ACQUISITION OF THE MINERAL SPRINGS AT SARATOGA SPRINGS.—The State of New York has made a large investment in the acquisition of the mineral springs at Saratoga which have so important a history for healthful use by citizens of this country and of foreign countries during the past century.

CONFERENCE TO REDUCE INFANT MORTALITY.—Owing to the large death rate among babies in New York State, a conference of all interested in this work was held, Thursday, June 12th, at two o'clock, in the Assembly Chamber of the Capitol. It is hoped that this meeting will prove the nucleus of a state-wide movement to reduce infant mortality and increase and encourage every phase of infant welfare work.

FOURTEENTH NEW YORK STATE CONFERENCE OF CHARITIES AND CORRECTION.—The Fourteenth New York State Conference of Charities and Correction will be held at the Hotel Statler, Buffalo, November 18, 19, and 20th, 1913.

THIRD INTERNATIONAL CONGRESS FOR DISEASES OF OCCUPATION.—The Third International Congress for Diseases of Occupation will be held at Vienna in September, 1914.

WOOD ALCOHOL CAUSES BLINDNESS.—Thirteen persons in New York State were made blind for life and four were killed during the past year either by drinking wood alcohol or inhaling its poisonous fumes, while throughout the country hundreds of innocent persons have been victimized by the same poison according to the Fourth Annual Report of the New York Committee on Prevention of Blindness.

The report further states, what is not generally known, that although wood alcohol in as small a quantity as a teaspoonful has caused permanent blindness and in larger quantities often causes death, this poison is easily obtainable from various retail stores, drug stores and grocery stores, often without a label or warning to indicate its poisonous nature.

The general ignorance which prevails in regard to the poisonous nature of wood alcohol is evidenced by the lack of legal restrictions of its use. In no state in this country is there a law requiring adequate ventilation in industries where wood alcohol is used, while in a very few states is wood alcohol classified as a poison and so labeled.

The unnecessary deaths caused by wood alcohol poisoning and the pathetic cases of needless blindness from the same cause can only be prevented by such legislation and by the education of the lay public concerning the death and disease following the misuse of any form of wood alcohol.

COLLEGE OF SURGEONS.—An American College of Surgeons was organized at a meeting in Washington on Monday evening, May 5th, 1913. Four hundred and fifty prominent surgeons of the continent of North America came together at the invitation of an Organization Committee which was appointed by the Clinical Congress of Surgeons of North America at its meeting in November, 1912. This committee consisted of Edward Martin of Philadelphia, Emmet Rixford of San Francisco, John B. Murphy of Chicago, Rudolph Matas of New Orleans, Albert J. Ochsner of Chicago, Charles H. Mayo of Rochester, Minn., Frederic J. Cotton of Boston, George Emerson Brewer of New York City, J. M. T. Finney of Baltimore, W. W. Chipman of Montreal, George W. Crile of Cleveland and Franklin H. Martin of Chicago.

At this meeting in Washington, called for the purpose of effecting an organization, the Committee on Organization presented a definite tentative plan which plan included a call of the meeting, the presentation of by-laws, the presentation of resolutions, a plan for the completion of the organization by the election of governing bodies and executive officers.

The Call of the Meeting summarizes the work for which the Committee was authorized:

"First. It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine, who is allowed to perform independently surgical operations in general surgery or any of its specialties.

"Second, It should consider the desirability of listing the names of

those men who desire to practice surgery and who come under the authorized requirements.

"Third, It should seek the means of legalizing under national, colonial, state or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons.

"Fourth, It should seek co-operation with the medical schools of the continent which have the right to confer the degree of M. D., under the present recognized standards, and urge these colleges to confer a supplementary degree on each of its graduates who have, in addition to their medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories and actual operative surgery.

"Fifth, It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians in order that the laity as well as medical men can distinguish between the men who have been authorized to practice surgery, and those who have not."

"The net result of the Committee's efforts is that five hundred surgeons of all specialties, representing every large center of population, every important university city with a teaching faculty of medicine, every special and general society representing a specialty of surgery, all the important surgical clinics and hospitals, besides many independent surgeons from all portions of the North American continent have consented to become founders of the organization under contemplation, and of this five hundred fully four hundred and fifty are here at this hour ready to fulfill their obligation."

The Founders Organization was then completed by the election of Edward Martin as Chairman and Franklin H. Martin as Secretary and the authorization of an order of business.

The following surgical societies and associations of North America are represented:

American Surgical Association, Section on Surgery of the American Medical Association, Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, General Surgical Division of the Clinical Congress of Surgeons of North America, Division of Surgical Specialties of the Clinical Congress of Surgeons of North America, American Gynecological Society, Southern Surgical and Gynecological Association, Western Surgical Association, Section on Surgery of the Canadian Medical Association, American Association of Obstetricians and Gynecologists, American Orthopedic Association, American Association of Genito-Urinary Surgeons, American Laryngological Society, American Ophthalmological Society, American Otological Society. Twenty members shall be elected at large to represent surgeons of North America not affiliated with the above societies or associations.

The Fellows of the College shall be graduates in medicine, who are legalized to practice medicine in their states and provinces, who have

made an application for fellowship, such application to be endorsed by three Fellows of the College, one of whom shall be a member of the Board of Governors, and who meets the qualification requirements that shall, from time to time, be established by the Board of Regents, and who shall be elected to fellowship by the Board of Regents on recommendation of the Committee on Credentials.

All Fellows of the College shall be designated a Fellow of the College of Surgeons and shall be authorized and encouraged to use the letters F. C. S. after his name on professional cards, in professional directories and in scientific articles in surgical literature.

The following officers were elected: President, J. M. T. Finney, Maryland; First Vice-President, W. W. Chipman, Quebec; Second Vice-President, Rudolph Matas, Louisiana; Treasurer, A. J. Ochsner, Illinois; General Secretary, Franklin H. Martin, Illinois. *Board of Regents:* J. M. T. Finney, Maryland; A. J. Ochsner, Illinois; Franklin H. Martin, Illinois; George E. Brewer, New York; George E. Armstrong, Quebec; John B. Murphy, Illinois; Edward Martin, Pennsylvania; F. J. Cotton, Massachusetts; Herbert A. Bruce, Ontario; C. F. Stokes, Washington, D. C.; William D. Haggard, Tennessee; George W. Crile, Ohio; Robert E. McKechnie, British Columbia; Charles H. Mayo, Minnesota; Harry M. Sherman, California.

Formal conferring of Fellowships: The first convocation for the formal conferring of fellowships will occur in November, 1913, at a time and place that will be designated later. The first directory of Fellows will be distributed at that meeting. For that reason the applications for fellowships on the part of A, B, and C classes should be filed as promptly as possible in order to facilitate the correcting of lists for publication.

PERSONALS.—Dr. GEORGE S. MUNSON (A. M. C. '80) sailed for Europe, June 26th.

—Dr. THOMAS C. SAWYER (A. M. C. '94) has been appointed prison physician to Auburn prison.

—Dr. WILLIAM G. MACK (A. M. C. '00) is now at 1385 Main Street, East, Rochester, N. Y.

—Dr. HENRY S. ROWE (A. M. C. '05) has removed from Cambridge to Round Lake, N. Y.

—Dr. HARRY RULISON (A. M. C. '05) has removed from 42 Dove Street to 349 E. Madison Avenue.

—Dr. CHARLES E. SLATER (A. M. C. '09) has left Valatie and is now at Fort Plain, N. Y.

—Dr. JOHN E. BURKE (A. M. C. '10) is practicing at 2370-6th Avenue, Troy, N. Y.

—Dr. LAVERNE A. BOUTON (A. M. C. '11) has opened an office at Fonda, N. Y.

—Dr. EDMUND J. O'DONNELL (A. M. C. '11) is engaged in active practice at 574 Central Avenue, Albany, N. Y.

—Dr. JOSEPH H. BOWERS (A. M. C. '12) is practicing at 800 Madison Avenue, Albany, N. Y.

—Dr. DONALD A. MACDUFFIE (A. M. C. '12) has opened an office at Olean, N. Y.

—Dr. HOMER H. OAKSFORD (A. M. C. '12) is located at 666 E. Fulton Street, Gloversville, N. Y.

—Dr. CHARLES E. STOTT (A. M. C. '12) has opened an office at East Berne, N. Y.

—Dr. CYRUS S. MERRILL has resigned as Attending Ophthalmic and Aural Surgeon to the Albany Hospital and has been appointed Consulting Surgeon. Dr. ARTHUR J. BEDELL (A. M. C. '01) has been appointed Attending Ophthalmic and Aural Surgeon to the Albany Hospital.

MARRIED.—Dr. FRANK G. SCHAILBLE (A. M. C. '05) of New York City and Mrs. Lena Lovejoy, at Cambridge, N. Y.

—Dr. CHARLES SLATER (A. M. C. '09) of Fort Plain and Miss Adelaide S. Blessing, at Albany, June 4, 1913.

—Dr. JOHN B. BURKE (A. M. C. '10) and Miss Elizabeth F. Clark, both of Troy.

—Dr. LAVERNE BOUTON (A. M. C. '11) and Miss Ethel McGrath, at Schenectady, N. Y., Saturday, June 7, 1913.

—Dr. GARRET M. CLOWE (A. M. C. '13) of Schenectady, N. Y., and Miss Helen Cutler of North Attleboro, Mass., at Attleboro, June 4, 1913.

DIED.—Dr. ELMORE S. ALBEE (A. M. C. '70), a member of the American Medical Association; for ten years health officer of Rockingham County, N. H., and Bellows Falls, Vt.; a very capable and efficient official; a practitioner of Bellows Falls since 1875, with a large family and consultation practice in that part of Vermont and New Hampshire adjacent to Bellows Falls, died at his home, May 14, from pneumonia, aged 65.

—Dr. AUGUST J. FREUTEL (A. M. C. '02), a member of the American Medical Association, died at his home in New York City, April 28, aged 36.

—Dr. RICHARD FLETCHER VAN HEUSEN, son of the late Theodore M. Van Heusen, one of the founders of the Van Heusen, Charles Company of this city, died June 16, 1913, at his home, 611 West One Hundred and Tenth Street, New York. He had been in ill health for about a year.

Dr. Van Heusen was born in Albany, November 26, 1867, and was a graduate of the Albany Boys' Academy, the Albany Medical College of the class of 1895, and the University of Michigan. He had practiced medicine in New York City ever since completing his studies.

Dr. Van Heusen is survived by his wife, one daughter, and two brothers, Charles M. Van Heusen, the present head of the Van Heusen, Charles Company; and John M. of Boston.

Current Medical Literature

MEDICINE

Edited by Samuel B. Ward, M. D., and Charles K. Winne, Jr., M. D.

Bence-Jones Proteinuria: A Report of Four Cases, with some Chemical and Biological Notes.

THOMAS R. BOGGS and C. G. GUTHRIE. *The American Journal of Medical Sciences*, Vol. CXLIV, No. 6, December, 1912.

The writers had the unusual opportunity of studying within a period of little more than a year, instances of the occurrence in the urine of each of four patients of the rare albuminous substance known as Bence-Jones body or Bence-Jones protein. The great body of cases in which this substance has been found in the urine have been examples of multiple myeloma, although not all such patients have shown it. In isolated instances this body has been found in the urine of patients suffering from other pathological states, such as leukemia, chloroma, lymphosarcoma, myxedema, and carcinomatous metastases (one case). It is also to be noted that some of the reported cases of leukemia and osteomalacia with which Bence-Jones proteinuria has been associated have later proven to be examples of multiple myeloma.

The Bence-Jones body was thought for a long while to be an albumose, but recent studies have made it certain that it is a true protein. Many theories have been offered as to its origin, the most important of which are that it is derived (1) from the proteins of the tissues or the blood, (2) specifically from the tissues of the bones, or (3) as a product of abnormal protein metabolism, either endogenous or exogenous. Of these theories the weight of recent evidence seems to favor the idea that it is due to the influence of the tumor or its products on the general tissue metabolism rather than that it is derived directly from the tumor substance.

The tests for this body as it occurs in the urine are as follows: (1) When making the ordinary heat and acid test for the presence of protein in the urine a marked turbidity is found to occur well below the boiling point, usually between 50 and 60 degrees Centigrade. This turbidity partially clears on boiling to return again as the specimen cools. (2) The addition of a few drops of 25% nitric acid to a portion of cold urine produces a turbidity which is increased at 60 degrees, clearing almost completely at the boiling point, reprecipitation occurring on cooling. (3) The addition of two volumes of saturated ammonium sulphate solution to one volume of the urine causes a voluminous precipitation, sometimes quite slowly.

The writers give a detailed history of each of the patients under their observation together with full reports of the urinary findings in each. Of the four cases two were clinically multiple myeloma, and a third was probably of the same type. The fourth was one of metastatic

carcinoma from the breast. The recognition of the Bence-Jones body antedated, in each case, any suspicion of the nature of their trouble, with the exception of the case of carcinomatous metastases. The presence of the substance in the urine of a patient may thus be of diagnostic significance. In two of the cases palpable bone tumors developed only late in the disease. In another death occurred from an intercurrent affection before the appearance of any symptoms suggesting bone involvement; and three weeks before death, radiographs of the bones were normal.

Except the case of carcinomatosis, who was aged thirty-seven years, all of the patients were over fifty years of age. Except a moderate secondary anaemia the blood picture in all the cases was normal. In all there was evidence of great metabolic disturbance as shown by the extreme emaciation. In two cases spontaneous fracture of the ribs occurred, and in two there were metastases to the soft tissues.

In one case there was marked hypertrichosis, macroglossia, keratosis of the palms and soles, and scleroderma. These all point to some disturbance of the internal secretions which may have been only incidental. In none of the cases was an autopsy permitted.

In only one case was serum albumin present in addition to the Bence-Jones protein, and in this case only just before death. In only one case were casts found in the urine (not the same case). The chloride excretion was in all cases very greatly diminished. The amount of Bence-Jones protein present varied in one case from two to five grams per liter with a daily output of two or three liters. In another case the amount of protein reached as high as seven grams per liter with two or three liters of urine in twenty-four hours. The smallest amount was a maximum of 1.5 grams per liter; average in this case of .25 to .59 grams per liter. Polyuria was present in three of the cases at some time.

From the fact that they were able to see four cases within a short period of time the writers consider that perhaps the condition is not as rare as we are led to suppose from the meagre literature on the subject. They suggest a more careful examination of the urine in doubtful cases and point out the fact that three of the cases were discovered following the interest aroused among local physicians by the presence of the first case.

Pertussis: The Histological Lesion in the Respiratory Tract.

F. B. MALLORY and A. A. HORNOR. *The Journal of Medical Research*, Vol. XXVII, No. 2, November, 1912.

The Relation of the Bordet-Gengou Bacillus to the Lesion of Pertussis.

F. B. MALLORY, A. A. HORNOR and F. F. HENDERSON. *The Journal of Medical Research*, Vol. XXVII, No. 4, March, 1913.

In their first paper the writers describe a lesion involving the ciliated epithelium lining the trachea and bronchi discovered by them in a study

of material obtained from three fatal cases of whooping-cough. This lesion is apparently peculiar to this disease, and, in the opinion of the writers, offers, perhaps, a mechanical basis as a cause of the characteristic symptoms.

In the first of the cases described, in which the disease had existed for fifteen days or more before death, microscopic examination showed large numbers of minute bacteria between the cilia of many of the cells lining the trachea. The cilia of single cells or of large groups of them were affected. The organisms usually extended to the bases of the cilia, but occasionally only reached part way, and often caused a lateral spreading of the cilia of a single cell. In places the cilia were either entirely absent or were reduced to short stubs which still showed the bacilli packed between them, the long axes of the cilia and of the bacteria usually corresponding. The second case gave findings similar to the first, though the cilia were more often absent over large areas, or were reduced to stubs. This case was of about forty-two days duration. In these two cases examinations of the lungs failed to show any organisms between the cilia of the cells of the bronchi and bronchioles, but in the third case (material preserved in the laboratory from a patient autopsied fifteen years ago) which had lasted about sixteen days before death, the cells lining these structures showed in some areas the same masses of bacilli between the cilia.

Masses of bacteria similar in size and appearance to those between the cilia were found in places in the secretion in the trachea and bronchi, in the latter situation apparently in pure culture. Occasionally they were present in numbers in the cytoplasm of the polymorphonuclear leucocytes.

These microorganism are very minute and stained but lightly with the ordinary methods. They are Gram negative ovoid bacilli. They strongly suggest the organism discovered in 1900 by Bordet and Gengou in the sputum of cases of pertussis and obtained by them in pure culture in 1906. This bacillus is now generally accepted as the cause of whooping-cough, as it is found only in this disease and always in the early stages. The patients' blood also produces a specific antibody for this organism. Klimenko has confirmed the work of Bordet and Gengou and was further able to infect puppies and monkeys with the bacillus, causing symptoms similar to pertussis but without the characteristic whoop. He was also able to recover the organism from these animals and their blood showed the presence of the antibody.

The writers consider that the injury produced by these bacilli lying between the cilia of the epithelial cells lining the trachea and bronchi is largely mechanical, interfering seriously with the normal ciliary action and thus with the removal of secretion and of inhaled particles. There seemed to be no necrosis at all of the cells, the damage being limited to the cilia. There is, however, some evidence of the production of a mild toxin, such as the exudation of leucocytes into the lumen of the trachea and bronchi from the blood vessels lying outside of them, by

certain changes taking place in the lymph nodules similar to that occurring in other infectious diseases, by the production of the well-known lymphocytosis of pertussis, and by the production of a specific antibody.

In their second paper the writers detail the results of further studies upon the occurrence of this lesion and its relation to the bacillus of Bordet and Gengou as demonstrated in animals experimentally infected.

Their first experiment was to ascertain whether or not they could produce the characteristic lesion in animals. For this purpose a puppy was inoculated intratracheally with sputum obtained from patients in the acute stages of whooping-cough. The animal was killed at the end of six weeks and upon examination the tissues showed lesions exactly corresponding with those in the human cases.

Sputum from thirty cases of whooping-cough was examined and in every case the characteristic bacilli were found, and often in almost a pure state, both free and enclosed in polymorphonuclear leucocytes and rarely between the cilia of desquamated epithelial cells. After some difficulty pure cultures were finally obtained from the sputum of two patients and also from a puppy inoculated with human sputum. With these cultures several puppies were inoculated intratracheally. A culture of the original Bordet-Gengou bacillus was also used in the same way. In two of the animals the sections showed the entire success of the experiment, and from one of them the bacillus was reobtained in pure culture. In two animals the results were negative and also in those inoculated with the Bordet-Gengou bacillus. In each case, however, the organism was recovered from the trachea or lungs. Three adult rhesus monkeys were similarly inoculated, but as they showed no symptoms they were not killed.

Four rabbits were inoculated by dropping a small amount of bouillon culture into the nares. They were killed after varying periods of time up to twenty-five days, and in each instance the *Bacillus pertussis* was found between the cilia of the epithelial cells of the trachea and in the nares, less often in the larger and smaller bronchi, and occasionally free in the secretion of the trachea and bronchi. In three instances the organisms were recovered in pure cultures. A rabbit was inoculated with a culture of the original Bordet-Gengou bacillus. The bacillus was reobtained in pure cultures from the trachea and bronchi and was found microscopically in moderate numbers in sections of the nares, trachea and bronchi.

Several puppies kept in the same cage with the one originally inoculated with sputum acquired infection by direct contact or by contagion and showed the typical lesion in the trachea and lungs.

The lesion in animals corresponds in every way with that in man, but the number of organisms is rarely so great. The animal studies showed clearly that the cilia are not destroyed, and that the cells are not noticeably injured in any way. However, a certain number of polymorpho-

nuclear leucocytes can usually be found migrating between the epithelial cells to reach the surface. These are sometimes numerous.

The chief symptoms presented by the puppies were early sneezing and coughing. There was also more or less secretion from the nose and eyes. Later the coughing became more severe and was spasmodic in character. In rabbits no coughing or sneezing was observed. The only symptom shown by them was emaciation.

In summing up, the writers state that the failure heretofore to observe the bacillus of whooping-cough in its peculiar and characteristic location in the respiratory tract was probably due to its minute size and its faint staining properties by the ordinary methods. They show that they have supplied the missing steps which have up to the present time been lacking, according to Koch's laws, for the complete demonstration of the bacillus of Bordet and Gengou as the cause of whooping cough. This result should encourage further investigation in the search for a vaccine or antitoxin which may be of use in the treatment of the disease, as they point out that the diminution in numbers and final disappearance of the microorganisms under ordinary conditions in the course of a few weeks strongly suggests that conditions for growth become unfavorable, probably due to the production of some antibody.

Indicanuria.

WILLIAM GERRY MORGAN. *American Journal of Medical Sciences*, Vol. CXLIV, No. 6. December, 1912.

Indican, or the indoxylic sulphate of potassium, is non-toxic. Indol, from which it is derived, is but slightly toxic, producing, according to Herter, in man, frontal headache, mental irritability, insomnia, etc. We make use of the indican test, however, because it is believed that in most cases the various products of bacterial decomposition of proteids in the intestines, that is, the aromatic bodies (including indol, skatol, phenol, and the cresols) and toxalbumins develop and are absorbed with a certain relationship. Since we have at present no method of determining the quantity of the more definitely poisonous toxalbumins, we are forced to estimate their amount by the degree of putrefaction, as evidenced by the amount of indican excreted in the urine.

It is quite certain that the lower ileum is the seat of bacterial digestion or putrefaction of proteids and that the chief absorptive seat is the colon. Considerable putrefaction can undoubtedly occur without the occurrence of indicanuria, due to non-absorption from the colonic mucosa or to some protective mechanism in various organs of the body. On the other hand, loss of continuity of the mucous membrane of the colon may cause an indicanuria of a degree out of proportion to the amount of putrefaction. Notwithstanding these and possible other errors in the method of reasoning, the writer believes that excessive indican in the urine always indicates abnormal functioning, and that the cause should be, if possible, found and eliminated.

He has critically studied the cases of indicanuria which he met with in 1911 in his practice as a gastro-enterologist. There were in all 148 cases. In some it was accidental or transitory, in some recurrent, in others more or less constant, a definite part of the clinical picture, but still associated with other pathological processes, and in several it was present without evident cause. The latter are the cases of true indicanuria, idiopathic, or perhaps to be classed as pure intestinal auto-intoxication. These latter cases the writer considers as rare. Of 89 new cases showing indican in the urine on the initial routine examination, about 60 per cent had but a small amount, while in about 15 per cent it was present in excessive amounts.

Analyses of the cases show no particular etiological factor common to all or even to a considerable number of the patients.

The majority of the cases were seen during the first six months of the year, and certainly excessively hot weather does not seem to play any part in causing or increasing the amount of indican in the urine.

Nearly all of the more common forms of gastro-intestinal diseases were represented. Of the patients in whom gastric analyses were made a considerable number showed increased figures for acidity, but the writer is unable to state whether there is any direct connection between these findings. He does not agree with the writers who regard the combination of hyperacidity and indican as of diagnostic importance in ulcer of the stomach. Nor does he agree with the view that if it is possible to exclude the presence of ulcer the same combination of findings betokens some extragastric inflammatory lesion, as appendicitis or cholecystitis.

Uncomplicated constipation does not in the writer's opinion seem to have been a factor in the production of indicanuria, though some observers hold an opposite view. Many patients classed as constipated are merely those with a tendency towards constipation. His series showed as follows in this respect: Constipated 60, diarrhoea present 15, constipation alternating with diarrhoea 13, and the balance normal. Several of the patients with the most marked and persistent indicanuria came in the class of those having normal daily bowel movements. It is a question whether the state of the bowels should be considered under etiology or symptomatology, as either the constipation or the diarrhoea may be the result and not the cause of the putrefaction and intoxication. Obstruction of the transverse colon or above it may result in profound indicanuria, but that of the lower tract is seldom complicated with this condition.

Indicanuria, as is well known, occurs in peritonitis, typhoid, and cholera, and ozena, caries, and other pus collections are often responsible. The writer does not consider that affections of the liver have any direct causative action upon the occurrence of indicanuria, except in cases of extreme hepatic insufficiency. In his opinion the most frequent cause of the excessive putrefaction which leads to indicanuria is a combination of improper diet, most always excessive in quantity, and a

run-down condition with loss of nerve tone. This has been demonstrated to his satisfaction in Washington by the greater number of cases seen during the period of the year furthest from the vacation or at the end of the busy season.

The writer discusses the question whether or not there is a symptom-complex which would enable one to say that a patient is suffering from an intoxication manifested by indicanuria. Some of the patients presented typical and complete clinical pictures, but the majority showed only a few of the symptoms. These were usually indicative of an intoxication by a poison having a predilection for the nervous system. The typical symptom-complex consists of vertigo of varying degree, dull headache, languor, drowsiness, depression, lack of ambition, inability to concentrate the mind, insomnia, or sleep that is not restful, easy fatigue, irritability, gas in the bowels, muscle pain and cramps in the legs, cold hands and feet, and fetid breath. In many there is lack of co-ordination. None of these symptoms were constant, but nearly all of the cases exhibited some of them. A few cases had no symptoms at all.

The symptom which was complained of by the greatest number of patients—66—was gas in the bowels, indicating the underlying putrefaction. Early fatigue was mentioned as one of the most troublesome symptoms by 32. Allied symptoms of constant languor and depression usually accompanied the fatigue, but was present in 17 patients without the fatigue. Headache was present in some form in 60 of the patients. This might be neuralgic in character, but was more often a dull ache in the frontal region, appearing either occasionally or daily, often worse in the morning. Dizziness was especially troublesome in 55 patients. This was of varying degree and also varied in the time of its appearance. Insomnia was often noted, or restless sleep. One of the more rarely noted symptoms, but also one of the most characteristic, was cramps or other muscle pains, usually in the legs.

Nearly all the series had a more or less marked anaemia, the average being about 72 per cent of haemoglobin. The skin was often pale and dry and skin eruptions were not uncommon.

There has been a good deal of discussion as to whether or not albumin and indican are usually found together in the urine. The writer states that in his series it was exceedingly common to find both substances. The former was more often present in faint traces and with it hyaline casts indicative of a chronic interstitial change. This is not at all surprising in view of the long-continued excretion of poisons by the kidneys.

Treatment for the condition resolves itself into methods which will (1) prevent the formation of toxins and (2) eliminate those already formed. The first indication is to remove the cause of the primary putrefaction and to treat any disorder of the gastro-intestinal canal which may be present either in a causative or accidental relationship with the indicanuria. Removal of the mental strain under which many of the patients were working was often sufficient to overcome the excessive production of indican. Anti-putrefactive measures consist in general

hygienic directions, diet, exercise, irrigation of the bowel and medication. Purgatives were usually not only of no avail but even caused, at times, an increase in the condition. Irrigations were often necessary for direct treatment of the indicanuria. Various solutions have been used according to the indications: normal saline, soda, argyrol, ichthyol, have all given results.

In arranging the diet the amount of proteids was greatly reduced, in order to remove much of the material available for putrefaction. Frequent and rapid changes of the diet were also tried. Buttermilk, natural or artificial, and various preparations of the lactic acid bacilli were of little value. Restoration of nerve tone through a complete bodily and mental rest, such as a long vacation in the mountains, was of great value in the cases depending upon overwork.

The majority of the cases were promptly cured, but in some of them progress was slow and discouraging. It is the writer's opinion that the longer the condition has existed before proper treatment is instituted, the greater the length of time necessary for a cure.

GYNECOLOGY.

Edited by John A. Sampson, M. D.

Interpretation of Uterine Curettings.

ROBERT T. FRANK. *American Journal of Obstetrics, February, 1912.*

The writer calls attention to the fact that many pelvic symptoms, and especially uterine hemorrhage and leucorrhoea, are treated in a routine way by curettage. The specimens obtained are then sent to the pathologist, and after a due interval a report is returned with the diagnosis of "endometritis." Thus the clinician is encouraged to continue this empiric treatment without self-criticism.

Hitschmaun and Adler have shown that the mucosa of the normal uterus undergoes regular periodic changes which they have divided into four main phases, namely, the premenstrual, menstrual, postmenstrual and interval. They showed that the so-called "glandular hypertrophy" or "hypertrophic endometritis" was identical with the changes found in the normal endometrium in the late interval or premenstrual stage, and that "interstitial endometritis" represented the postmenstrual period. They conclude that the only positive evidence of chronic inflammation of the endometrium is the presence of plasma cells.

The writer believes that the presence of plasma cells is an evidence of subacute or chronic endometritis but their absence does not exclude it. He also believes that the cause of endometrial changes, whether shown by glandular overactivity or hemorrhage, is ovarian in origin. He believes that the so-called "uterine" symptoms, such as atrophy, dysmenorrhoea, sterility, subinvolution, menorrhagia and metrorrhagia are due, in the majority of instances, to functional disturbances of the ovary.

ALBANY MEDICAL ANNALS

Original Communications

THE PRESENT STATUS OF RENAL FUNCTIONAL TESTS WITH SPECIAL REFERENCE TO PHENOL-SULPHONEPHTHALEIN.

Read before the Medical Society of the County of Albany, April 9, 1913.

By NELSON K. FROMM, A. B., M. D.,

AND

JOHN F. SOUTHWELL, M. D.

It has long been axiomatic among clinicians that the physical and chemical properties of abnormal urine bear but a poor index to the true functional capacity of the kidneys. It is common knowledge that these organs, markedly diseased, often carry out their work with no indication of the morbid processes which involve them. Albumen and casts may be absent from the urine in cases of severe renal disease, while they may be present when no serious involvement of the kidney itself exists. Under these circumstances, it has long been the desire of physiologists and others, if possible to institute methods of examination of the kidneys so that their true functional capacity could be determined, especially previous to the undertaking of any operative procedure.

Recently, aside from surgical interests, a stimulus to this work has resulted from the need of a basis for a more accurate prognosis in the nephritides, as well as some method of estimating exactly the amount of destruction of the secreting substance of the kidneys.

Interest in this subject dates back for more than half a century. Todd in 1857 and Roberts in 1865 wrote concerning the delayed elimination by the kidneys of certain drugs. Bouchard in 1873 made some experimental observations regarding the elimination of fuchsin. But all of these studies were spasmodic and of little scientific importance. During the last decade and a half real

progress has been made; a number of tests have been originated and are in use to-day. Each has its host of advocates and likewise are open to the criticisms of others.

We shall endeavor to briefly describe the more important.

Cryoscopy.

In estimating the work performed by the kidney, the determination of the freezing point or cryoscopy of the blood has occupied an important position. A peculiarity of the blood first established by Koranyi is the fact that its molecular concentration is constant under normal conditions, but is changed in certain diseases and almost exclusively in affections of the kidney. These organs serve as regulators of the molecular composition of the blood, and this equalization is explained upon the theory of osmotic pressure. Upon the basis of the fact of the lowering of the freezing point of a solvent, by addition of foreign substances, a determination of the molecular weight is obtained by measure of this lowering.

Determination of the freezing point is usually done in the Beckman-Haidenhain apparatus, which consists essentially of a delicate specially constructed thermometer placed in a glass cylinder in which the fluid to be examined, in this case blood, is constantly agitated by a platinum stirrer. Glass cylinder, thermometer and fluid are then placed in a freezing mixture, 4°C and the fluid cooled by constant stirring. A moment then arises when the fluid congeals. At the point of change from the fluid to the solid state, heat is liberated which causes the mercury column rapidly to rise to a certain point where it remains stationary for some time—the physical freezing point. On long standing it again sinks and acquires gradually the temperature of the surrounding freezing mixture. If the freezing point of distilled water is now determined in the same manner and the freezing point of the solution subtracted from that of water, the figure indicating how much lower the solution freezes than water is obtained. In blood this difference is 0.56°C . This value undergoes an essential change in renal disease, that is the freezing point is lower when an affection of both kidneys exists; the degree of difference in comparison to the normal freezing point of the blood is in proportion to the severity of the renal affection.

On the other hand, as first pointed out by Lenhartz, the fact is to be emphasized, that in unilateral renal disease, even when the latter has advanced to complete destruction of the organ, the freezing point shows the normal height, provided the other kidney is healthy.

Leon Bernard has introduced comparative cryoscopy of the blood and the urine and this has proven to be of considerable value in indicating the functional efficiency of the kidney. It has been demonstrated that in severe bilateral kidney disease usually the freezing point of the blood is lowered and that of the urine raised.

Clinicians seem to be about equally divided as to the merits and demerits of blood and urine cryoscopy. The reliability of blood cryoscopy has been criticised by Isreal, Rovsing, Barth, Boyd and others. The death blow to the general acceptance of blood cryoscopy was dealt by Kapsammer in 1907. After a most exhaustive study of the literature and on the basis of extensive personal experience he arrived at the conclusion that cryoscopy of the blood and urine though of interest theoretically, does not amount for practical purposes to more than the determination of the specific gravity.

On the other hand, Kummell is a persistent advocate of the test and from the normal or abnormal freezing point of blood formulates strict conclusions on the anatomic condition and functional capacity of one or both kidneys. The latest work on blood cryoscopy has been done by Krotoszyner and Hartman. They think it has some advantage over the various color tests to be described and conclude that it aids the diagnosis of renal incapacity and should be a routine procedure in doubtful cases.

Electrical Conductivity of the Urine.

The electrical conductivity of the urine in health and disease was first studied by Turner whose method determines the amount of the salts in the urine. The electrical conductivity is estimated in ohms of resistance and is entirely dependent on the number of ions in the solution and consequently takes into account principally the mineral content of the urine. The Kohlrausch method consisting of a Whetstone bridge, resistance box, telephone and conductivity cells is employed. This test has

been very little used, the apparatus is expensive and considerable skill and training are necessary before accurate readings can be made.

Methylene Blue.

The methylene blue test was introduced in 1897 by Achard and Castaigne. The drug is usually administered by intramuscular injection, 15m. of a five per cent solution. Usually at the end of a half hour the dye begins to appear in the urine and continues to be eliminated for from thirty-six to forty-eight hours and in some instances as long as six days, even in health. Achard and Castaigne and later Miller and others pointed out that the time of appearance is often delayed as is also the time of the maximum excretion. The duration of excretion is much prolonged in renal disease, and in chronic interstitial nephritis it is very slow sometimes being prolonged for as long as fifteen days. Bard and Bonnett have called attention to the fact that the excretion is not delayed in all forms of disease of the kidney but that it is usually normal or even accelerated in acute and chronic parenchymatous nephritis.

The drug undergoes unknown chemical changes in the body, sometimes only as much as fifty per cent being excreted; as a result of this the dye does not lend itself to accurate colorimetric methods of estimation and has practically been abandoned for more improved methods.

Indigo-Carmine.

This substance was first used by Haidenhain in investigating renal physiology. He showed that the dye was excreted by the epithelial cells of the convoluted tubules. Voelcher and Joseph in 1903 were the first to use it as a basis for a renal functional test. The usual method of performing the test is essentially as follows: A 0.4 per cent solution is used and 20 c.c of this is injected intramuscularly. In normal patients the urine becomes tinged a greenish blue ten to fifteen minutes after the injection and subsequently a deep greenish blue when a good elimination occurs. According to Kapsammer excretion is complete in twenty-four hours on an average in healthy individuals although considerable variations exist. Walters states that practical elimination occurs in twelve hours. In kidney disease the-

appearance is delayed and elimination prolonged. Oppenheimer used the substance in quantitative estimations but found that the color of the drug did not lend itself to reliable colorimetric reading on account of variations produced by urinary chromogens. Furthermore the dye is decolorized in purulent alkaline urine. Usually not more than twenty-five per cent of the drug is excreted by the kidneys. When a large quantity of indigo-carmine is injected some is excreted by the liver and appears in the feces as a leuco-derivative.

Opinions differ as to the value of indigo-carmine. Rowntree and Geraghty consider it only more valuable than methylene blue on account of its comparatively rapid appearance. On the other hand Thomas of Philadelphia who has used indigo-carmine more extensively than any other writer thinks it is of great value and in some instances the most reliable of all the colorimetric determinations. He uses both ureterscopy and ureteral catheterization for quantitative estimation. He apparently is not favorably impressed with the use of any dye as the basis of a quantitative functional test.

Rosaniline.

Rosaniline or sodium rosaniline trisulphate which is the principle constituent of commercial fuchsin, was first introduced by Lepine. One c.c. of a one per cent solution is injected subcutaneously. This practically always appears in the urine in normal cases in less than a half hour. The maximum intensity of color occurs during the second hour in some cases, but more frequently during the third. From sixty-five to ninety-five per cent of the amount injected is recovered in twenty-four hours. In parenchymatous nephritis the drug appears as early as in normal cases and the quantity eliminated varies between twenty-seven and fifty per cent. In interstitial nephritis the first appearance is delayed and the time of elimination is markedly prolonged. One great advantage of the use of this drug would seem to be its almost entire elimination by the kidneys. On the whole, however, the test has never attained any great popularity.

Phloridzin.

This test is based upon the discovery by Von Mering of the peculiar property of phloridzin by virtue of which it produces a

glycosuria unaccompanied by hyperglycemia. Phloridzin is used to show the functional activity of the kidney from the standpoint of its glandular function and therefore differs from all the other tests. It formerly met with considerable favor and is particularly championed by Casper and Richter. Their method consists in subcutaneous administration of 5mg. of a freshly prepared aqueous solution of phloridzin. This is followed in normal cases in from twenty to thirty minutes by the appearance of sugar in the urine. The glycosuria increases in intensity and reaches its maximum in an hour then gradually diminishes, disappearing in two or three hours. Normally one to two grams of glucose are excreted. It is customary to estimate the sugar output every fifteen minutes and thus the curve of the output is obtained. In the presence of renal disease the glycosuria is either entirely absent or delayed in appearance, and the amount eliminated is decreased. This test has now become unpopular on account of its unreliability. Walker has shown repeatedly that no glycosuria followed the injection, even when administered to normal individuals.

The Strauss-Grünwald Dilution Test.

As recommended by Goldberg the test is performed in the following manner. The patient takes nothing after 7 P. M. but the next morning drinks a pint of water at 6.30. The night urine is collected and also that voided at seven, eight, nine, ten, and eleven A. M., recording separately the amount and specific gravity of each portion. In health a corresponding amount of urine is voided during the first three hours; the patient constantly reclining. At 8 A. M. the urine has the lowest specific gravity and by 10 A. M. a pint at least has been voided. The amount voided, time required, specific gravity, and variations in the latter are the four points by which this test throws light. As possible sources of error must be borne in mind the psychogenic polyuria of nervous women and residual urine retained in cases of prostatic hypertrophy. This test is unique in its paucity of adherents.

The Polyuria Test of Albarran.

This test was first introduced in 1909. It is based on the principle that the greater the destruction of epithelium in the kidney, the less likely will that organ respond to an increase

in secretion after the administration of from 400-600 c.c. of water. When there is disease on one side the polyuria on that side is supposed to be diminished according to the extent of the lesion. This test of course is too fallacious to be depended upon alone. It is well known that a kidney practically devoid of tubular epithelium such as is frequently encountered in advanced cases of interstitial nephritis is capable of eliminating almost unlimited quantities of fluid. In such instances the polyuria test can be no index whatever of the kidneys' efficiency.

The Estimation of the Total Nitrogen and Urea.

These methods are rendered complicated by our having to know the exact diet of the subject and the necessity of twenty-four-hour specimens. In unilateral collections where it is as a rule inadvisable to leave the catheters in the ureters for so long a period as twenty-four hours, the only information we are able to obtain is concerning the output of one kidney as compared to that of the other, over a given period of time. The only accurate method of estimating total nitrogen output is by means of a Kjeldahl method, which while being accurate requires considerable time and complicated apparatus.

Specific Gravity and Total Solids.

The estimation of these two factors is an accurate indication of the amount of solids which have been passed into the urine by the kidneys, but a poor index of the functional ability of them. We can increase the value of our results considerably if we know the amount of water taken, the kind and amount of food ingested and the amount of water lost by sweating and breathing, which of course renders this method of little value.

The Sodium Chloride and Water Test.

In this the daily excretion of sodium chloride as to percentage and total excretion is observed. The patient being kept on a constant diet, various amounts of salt are given by mouth and its increase noted in the urine. The saline excretion alone is of little value, because of the many avenues by means of which chloride of sodium is eliminated. The excretion of salt, following its administration in amounts greatly in excess of that

ordinarily taken with the food is accomplished by the renal tubules according to Schlayer. Normally large amounts of salt are eliminated by one of two methods. If it is given without extra water it is almost entirely excreted within twenty-four hours without diuresis, by increased concentration in the urine; if given with an excess of water it is excreted partially through increased concentration in the urine and partially through diuresis.

Where vascular injury to the kidney exists the administration of salt may be followed by a marked diuresis. This is usually associated with a somewhat low and fixed specific gravity, and the syndrome is spoken of by Schlayer as *vascular hyposthenuria*. Here the inability to concentrate is not due to any incapacity of the tubules to excrete salt, but to hypersensitive vessels, which respond to the salt administration with diuresis. In more severe vascular injury the vessels do not react in the same way, oliguria characterizing the urinary picture. In severe tubular destruction, a urine of fixed low specific gravity is obtained, the quantity of which is not materially affected by the administration of salt, and the salt content of which is not augmented by the administration of extra amounts of chloride because of the inability of the tubules to excrete it. Such a condition Schlayer calls *tubular hyposthenuria*.

These facts Rowntree and Fitz used as a basis for their salt and water test. The salt in the dietary of subjects was estimated approximately by Locke's tables. The urine was measured as passed, and twenty-four-hour specimens collected. The specific gravity was taken and daily salt analyses made. When the salt output was found to be approximately constant for two days, in suitable cases, a salt test of five to ten grams was given. In this way, when produced, a hyposthenuria and its type could be detected. The writers conclude, that the amount of water excreted in cases of pure nephritis, in response to sodium chloride stimulation may be of considerable diagnostic value.

Potassium Iodide Test.

This has recently been made use of by Rowntree, Fitz and Geraghty in experimental passive congestion of the kidney, although it was introduced by Duckworth as early as 1867.

Iodide of potash quickly appears in the urine following its oral administration, the average being about fifteen minutes after a two gram dose. According to the studies of Schlayer, potassium iodide is excreted solely by the tubules of the kidney and on it, he has placed most dependence in determining tubular functional capacity. It has been claimed by Schlayer and Takayasu that its excretion is not influenced by chronic passive congestion and that it is not delayed in cases of cardiac decompensation, but this is questioned by other workers.

The Lactose Test.

Lactose was shown by Voit to be excreted quantitatively by the kidneys following subcutaneous or intravenous administration. Since De Bonis showed that lactose was excreted by the glomeruli, Schlayer adopted it as a means of determining the functional glomerular capacity in the various forms of the nephritides encountered clinically. He considers delay in lactose excretion to be evidence of functional derangement of the vascular system. Rountree, Fitz and Geraghty used the following technic in animal experimentation: Three grams of lactose in fifteen cubic centimeters of distilled water were injected into the lumbar muscles under aseptic precautions. The animals were catheterized at the end of four hours and thereafter every half hour for eight or nine hours. Its presence in the urine was determined by the Fehling and Nylander methods and the total amount of lactose excreted in four hours was estimated polarimetrically by the Schmidt and Haemisch instrument. The total time necessary for complete excretion of lactose did not exceed six hours. This work was done on animals. Rountree and Fitz in a later communication modified the technic for clinical use. Two and five-tenths grams of lactose in 25 c.c. of freshly distilled water was pasteurized for four hours on four successive days at 75°C. This solution was injected intravenously. Following injection no constitutional disturbances resulted save occasional slight headaches or malaise and in one instance a severe chill and fever for a few hours. In humans the normal excretion time for this amount is four to six hours. Rountree and Fitz use Nylander's reagent and polarimetric readings for the total amounts of lactose regained. These authors believe experimental lactosuria

to be of great value diagnostically in determining the existence of abnormal renal function and the suppression of the secretion of lactose of considerable value prognostically.

The Phenolsulphonephthalein Test.

Phenolsulphonephthalein is a bright red crystalline powder slightly soluble in water but more so in alcohol. Its dilute alkaline solution is of a purer red than that of phenophthalein, the well known drug used in gastric analysis, while a more strongly alkaline solution has a decided purplish tinge. It is readily soluble in solutions of sodium carbonate and has a stronger avidity as an acid than phenophthalein. The substance was first prepared by Ira Remsen as follows; phthalic acid which is one of the higher complex organic acids of the benzene series of the hydro carbons, is heated, and phthalic anhydride results. This in turn is heated with a mixture of phenol and sulphuric acid as a dehydrating agent, and phenolsulphonephthalein is formed.

The pharmacology of this substance has been studied by Abel and Rowntree, who found that properly prepared solutions of the salt could be injected under the skin without the slightest evidence of an irritant action, that the drug could be administered by mouth without untoward effects of any kind, that administration in 0.1 gram doses or less by mouth, was followed by its appearance in the urine in one and a half hours, and that the urine exhibited it within ten minutes after its subcutaneous administration. Following the subcutaneous injection of one gram the drug appears in the bile in high concentration in one to two hours, it is then reabsorbed by all parts of the intestine and only a trace can be found in the stool, thus indicating that practically the total elimination is by the kidneys alone.

Abel and Rowntree after the injection of one gram doses in dogs found no indication of renal irritation, none of the cases studied, showing either albumen, sugar or casts. They found, however, that large doses of the drug given intravenously to rabbits exerted a mild diuretic action. They proved that phenolsulphonephthalein exerts only a slight or doubtful action as a purgative, when given by mouth, to dogs in one gram doses, and is entirely devoid of action in this way, when given subcutane-

ously in the same dose. From this evidence it appears to be definitely established that it is devoid of toxicity, probably more so than sodium chloride.

Rowntree and Geraghty have devised the following technic for the use of phenolsulphonephthalein as the basis of their test.

Twenty to thirty minutes before administering the drug the patient is given 300 to 400 c.c. of water by mouth in order to insure free urinary flow, as otherwise a delay in its appearance in the urine might be simply due to lack of secretion. The bladder is then completely emptied by means of a catheter introduced under aseptic precautions, and 1 c.c. of a carefully prepared solution containing 6 mg. of phenolsulphonephthalein to the cubic centimeter is administered subcutaneously or intramuscularly either in the arm or the buttocks by means of an accurately graduated syringe. The time is noted, and the urine is allowed to drain through the catheter into a test-tube containing one drop of a twenty-five per cent sodium hydroxid solution, and a note made of the time elapsing until the appearance of the first faint pinkish tinge. A sufficient quantity of twenty-five per cent sodium hydroxid solution is then added to make the urine decidedly alkaline so as to elicit the maximum color, as acid urine only becomes yellowish or orange, which immediately gives place to a brilliant purple red when it becomes alkaline. The sample is now placed in a liter measuring flask, mixed thoroughly with distilled water and the former accurately filled. A small filtered portion is then taken and compared with the standard used in all these determinations. This consists of 6 mg. of phenolsulphonephthalein diluted up to one liter and made alkaline by the addition of one or two drops of twenty-five per cent sodium hydroxid solution, and forms a beautiful purplish red fluid. On comparison of the diluted alkaline solution with the standard, by means of a colorimeter, the percentage of the drug eliminated is readily estimated.

Rowntree and Geraghty obtained the following results: In normal cases the drug appears in the urine in from five to ten minutes, and forty to sixty per cent of the 6 mg. dose (the average being about fifty per cent) is recovered in the first hour. From fifteen to twenty-five per cent of the drug administered is recovered in the second hour, making the total recovery for the two hours sixty-one to eighty-five per cent.

Rountree and Geraghty carried on their first work by means of the Dubosque colorimeter. This consists of two glass cylinders, cut with parallel plane surfaces, placed on arms capable of vertical movement by the manipulation of set screws on the posterior surface of the instrument. These crystals may be raised or lowered in glass chambers containing solutions, the colors of which are to be determined. In one cylinder is placed the standardized solution and in the other the solution to be tested. Light is reflected by means of a mirror to an ocular similar to that used on a microscope. By manipulation of the set screws, the crystals are elevated or lowered until a homogeneous coloration appears at the ocular. Scales with Vernier attachments furnish the readings from which the percentage of the color of the solution to be tested can be computed. In their more recent work Rountree and Geraghty have used a modification of the Autenrieth-Königsberger colorimeter manufactured by Hellege in Freiburg. This consists of a small box in which are contained a hollow glass wedge and a small rectangular cup. Light is allowed to enter by means of a ground glass anterior wall and two small prisms. The hollow wedge can be raised or lowered by means of a thumb screw and the height noted on an arbitrary scale. To perform the test the wedge-shaped cup is filled with a standard solution of phenolsulphophthalein, 6 mg. diluted to a liter and rendered alkaline with sodium hydroxide. The urine to be tested is likewise rendered alkaline, diluted to a liter and a small filtered portion poured into the rectangular cup. The wedge-shaped cup is now manipulated by means of the thumb screw until the two sides of the color field are identical and the percentage on the scale noted. This instrument is much cheaper than the Dubosque, less bulky and practically as accurate.

Cabot and Young have made use of a simpler form of apparatus. This consists of a series of ten test tubes, the first containing five per cent of the drug and the last fifty per cent, and the others in the series between. This provides a color scale comparable to that used in Tallquist's method of estimating hemoglobin. The urine to be tested, diluted as usual to 1000 ccm., is then poured into a test tube of similar diameter and compared with the scale. By this method they found it possible

to estimate the amount of the drug within two per cent, using the colorimeter as a control.

Time of Excretion.

Based on the experimental injection of phenolsulphonephthalein in several hundred normal individuals, Rowntree and Geraghty formulated a table of values which has been accepted by other workers. After subcutaneous administration of the drug the first trace appeared in the urine in from five to eleven minutes, the average being eight; thirty-eight to sixty per cent (average fifty per cent) in the first hour and sixty to eighty-five per cent for two hours. They found that in health the elimination was practically complete in two hours, only a trace being present during the third and fourth. More recently they made use of intramuscular and intravenous injections. The time of appearance following the intramuscular administration is practically the same as that after the subcutaneous, but the output averages five to ten per cent more for the first hour. Following the intravenous injection, the drug normally appears in from three to five minutes, and from thirty-five to forty-five per cent is eliminated in the first fifteen minutes, fifty to sixty-five per cent in the first half hour, and sixty-three to eighty per cent during the first hour.

In pathological cases the drug may not make its appearance until from fifteen to thirty minutes after injection and at the end of two hours anything from fifty per cent to only a trace eliminated.

Errors Due to Coloring Matter in the Urine.

We have noticed in our experience with the test, that in certain cases, coloring matters in the urine render the estimation difficult. This is usually noted in cases of rather low output of the drug, either with a dirty urine or with a high percentage of urinary chromogens. When the urine is rendered alkaline in these cases it takes on an orange tint which make accurate determinations difficult. Rowntree and Geraghty have recommended the use of basic lead acetate to precipitate the chromogens. In our hands the use of this lead acetate has not been satisfactory; as pointed out by Cabot and Young basic lead acetate removes with the

coloring matter considerable amount of color due to the drug, thus causing the reading to be much lower than it should be. The only satisfactory way out of this difficulty and advocated by Cabot, Young and others, is to make up each time a separate standard solution using the urine of the patient. For instance, if the patient at the end of the first hour voids 100 c.c.; in making up our standard we use 100 c.c. of this urine previously collected and 900 c.c. of water to make up the liter. This procedure makes the reading easy, and gives absolute accuracy.

We have modified the Hellege instrument by attaching to the sight window, the telescope furnished with the Dare hemoglobinometer, this allows accurate focusing and also an advantageous magnification of the color field, and we feel that it has added to the accuracy of our readings.

In the past two years phenolsulphonephthalein has been the basis of a number of studies on the functional capacity of the kidney under all sorts of normal conditions and in various pathological experimental lesions.

Experimentally on animals, Rowntree and Geraghty found that those diuretics (caffein, urea, dextrose, phloridzin, calomel) which are thought to exert a stimulating influence on the cells in the renal tubules, slightly increased the phthalein output, whereas those (hypertonic sodium chloride, potassium nitrate and digitalis) which act entirely by mechanical factors as by changes in osmotic tension or by changes in blood pressure, slightly decrease or cause no change in the excretion of phthalein.

Rowntree, Fitz and Geraghty very recently have studied the effects of experimental chronic passive congestion of the kidney on its function; their problems dealt with the effects of varying grades of permanent chronic passive congestion (partial obstruction of venous return) on the urinary picture, on the functional capacity of the kidney as revealed by functional studies, on the kidney histologically and on the general condition of the organism elsewhere. The methods utilized principally, consisted of opening the dog's abdomen and the application of constricting bands about the renal veins or about the vena cavae above the entrance of the renal veins. They used phenolsulphonephthalein, lactose, potassium iodide, and sodium chloride as functional indicators.

They concluded that phenolsulphonephthalein gave the most reliable information concerning the degree of renal insufficiency. They found marked delay in the excretion of lactose, iodide and salt in animals showing a normal phthalein output. These animals were, however, apparently in good general condition while subsequent events show that they remained so. On the other hand, a marked decrease in phthalein excretion was invariably associated with the development of clinical manifestations indicating renal inadequacy and often followed by death.

Lactose they found of least value in revealing the degree of involvement of renal function but of very great value in detecting its existence.

Austin and Esienbrey compared the elimination of nitrogen and chlorides with that of phenolsulphonephthalein in experimental acute nephritis, produced by the injection of uranium, cantharides, and potassium chromate and conclude that a marked decrease in the elimination of the phthalein occurs synchronously, as a rule, with the onset of the symptoms of intoxication (vomiting), and therefore the phenolsulphonephthalein test, would seem to be a better indicator of the ability of the kidney to eliminate the toxic substance responsible for the symptoms of renal insufficiency than are either the anatomic changes or the elimination of total nitrogen or of chlorides.

Christian, Smith and Walker in experimental cardio-renal disease reached about the same conclusions in regard to phenolsulphonephthalein.

Goldsborough and Ainsley studied the renal activity in pregnant and puerperal women as revealed by the phenolsulphonephthalein test. Summarized the results of these writers were as follows:

1st (Normal pregnant cases) first appearance, average fourteen minutes. First hour, average twenty-one per cent, second hour, average twenty-six per cent total elimination; average forty-seven per cent.

2nd (Normal puerperal cases) elimination first hour, average thirty-five per cent, elimination second hour twenty-five per cent, total sixty per cent.

Their results show that the average time required for the drug to appear in the urine is longer in pregnancy than in the

puerperium, and that both the percentage eliminated during the first hour and the total elimination are less in pregnancy than in the puerperium (and much less than in the normal non-pregnant state). These facts are to be accepted as an indication of diminished renal activity in normal pregnancy.

Pepper and Austin have recently reported the case of a boy aged nineteen years showing unusually good phthalein elimination (seventy and eighty per cent in two hours) in spite of the existence of a parenchymatous nephritis with marked epithelial degeneration. The indigo-carmine test was likewise performed and indicated prompt elimination. Studies were then made of the chloride and nitrogen elimination after the addition of known quantities of sodium chloride and urea to a constant diet. The results showed no delay in the nitrogen elimination and fair elimination of sodium chloride.

The Writers' Experience With Phenolsulphonephthalein.

During the past year and a half we have approximately made one hundred and fifty estimations on one hundred patients.

Our method has been to follow that devised by Geraghty and Rowntree, with the modifications as noted above. We have not been able to note any advantage in the Dubosque colorimeter over the Hellege instrument, with which the majority of our tests were performed. The latter instrument being very compact and extremely portable admits of its being used with artificial light, by placing the large aperture immediately in front of a Welsbach mantel or a Tungsten bulb. The Dubosque colorimeter is essentially a non-portable instrument.

Although phenolsulphonephthalein is now furnished by the manufacturers in aseptic ampules containing the exact dose, we use the solution in bulk, sterilizing by boiling before each injection.

In a series of cases we have noted the excretion of the drug following administration by mouth. The average elimination of the first trace was one hour and ten minutes. In all cases it continued to be eliminated for seven hours. In two it was even present after nine hours. In another series of normal cases we injected the drug subcutaneously; the average first appear-

ance was in nine minutes, the average first hour elimination was forty-eight per cent and the second hour twenty-five per cent. Our pathological cases include those of acute and chronic nephritis, diabetes-mellitus, prostatic hypertrophy, valvular and muscular cardiac disease, hypertrophic and atrophic cirrhosis of the liver, arterial disease, acute and chronic uremia, pernicious anaemia, chronic alcoholism, Graves' disease and acute and chronic surgical kidney lesions. In all of these cases we have found the elimination of phenolsulphonephthalein to have a direct ratio to the amount of renal disturbance clinically present.

We will cite a few cases of more than usual interest.

CASE I—Mr. J. S., age 68. Case of prostatic hypertrophy, mitral-regurgitation and myocardial insufficiency. Urine examination, Sp. Gr. 1014, albumen trace, occasional hyaline cast. Urea two per cent. Systolic blood pressure 165, Diastolic 110. Eye grounds show a slight blurring of the optic disc.

Phthalein, first appearance in twenty-five minutes, first hour ten per cent, second nine per cent, total nineteen per cent for the two hours. Second test three days later showed initial appearance of the drug in twenty-three minutes and a total of twenty per cent for the two hours.

The patient died three weeks later in uremic coma. The serious aspect of this case was not ascertainable from the meagre urinary findings, but the low phthalein output gave a true index of the condition.

CASE II—Mr. R. J. M., age 65. Arterio-sclerosis, pulmonary emphysema, and slight myocardial insufficiency. Systolic blood pressure 192, diastolic 118. Urea 1.8 per cent. Eye grounds negative. Urine shows a trace of albumen, Sp. Gr. 1017 occasional hyaline and finely granular casts.

Phthalein first appeared in sixteen minutes after subcutaneous administration, first hour twenty-five per cent, second hour ten per cent.

One week later the first trace appeared in fourteen minutes and thirty-eight per cent was eliminated in two hours. This patient was discharged from St. Peter's Hospital, but was re-admitted one month later, moribund in uremic coma.

CASE III—Mr. P. H., age 60. Arterio-sclerosis, myocardial insufficiency chronic diffuse nephritis. Systolic blood pressure 225. Urea 1.3 per cent. Urine Sp. Gr. 1010, albumen 1.7 per cent many hyaline and a few finely granular casts. Phthalein first appeared in fifteen minutes, first hour ten per cent, second hour six per cent. Four days later, first hour fifteen per cent, second hour five per cent. One week later first hour twenty per cent, second hour eight per cent. One month later, first hour twenty-five per cent, second hour fifteen per cent. Patient's condition is now much improved.

Treatment of this case was complete rest in bed, low sodium chloride and low nitrogenous diet, sodium nitrite, and sodium iodide. Had not the functional test given us an inkling of the low renal activity, uremia would have surely soon supervened.

CASE IV—Mr. M. W. M., admitted to St. Peter's Hospital in profound uremic coma; urine showed a large amount of albumen and many hyaline, finely and coarsely granular casts. Phthalein injected subcutaneously first appeared in twenty-eight minutes, first hour only a trace, second hour a trace. Patient died in coma six hours following his admission.

CASE V—Mr. L. K. B., age 63, entered St. Peter's Hospital December 30, 1912, banker.

Family History—Negative.

Personal History—Diseases of childhood. Has a double inguinal hernia resulting from whooping-cough when a child. Does not smoke or drink. Denies venereal disease.

Present Illness—About November, 1911, began to have difficult urination. Since that time patient has never been able to completely empty his bladder. Since December, 1912, the condition has been steadily growing worse and each urination accompanied with a passage of considerable blood. He has lost neither weight nor strength.

On physical examination we find a patient fairly well developed and nourished. Reflexes normal. Lungs negative. Liver dullness slightly decreased. Cardiac dullness enlarged from a compensated mitral insufficiency. Arteries somewhat sclerotic. Systolic blood pressure 140. The prostate exhibits a marked bilateral regular hypertrophy. The average urinary output for twenty-four hours is sixty-five ounces, which includes thirty ounces of residual urine. Urinary examination shows specific gravity 1004, a few white blood cells, a good trace of albumen, and an occasional hyaline cast.

January 2nd phthalein showed only twenty per cent elimination in two hours.

Since this patient entered the hospital for the removal of his prostate, it was not considered safe to operate with such a low phthalein excretion. A permanent catheter was introduced into the bladder to prevent the collection of residual urine and thus avoid any harmful effects upon the renal secretion which this back pressure undoubtedly exerted. This method of ante-operative treatment is being used at the Mayo clinic with very satisfactory results. Three functional tests performed from January 8th to the 18th revealed gradually increasing phthalein output from forty to fifty-five per cent. January 27th patient's condition underwent a severe change. He became drowsy, complained of severe headache, exhibited muscular twitching and entered into condition of partial coma. In other words an acute uremia was added to the clinical picture. Phthalein output now diminished to twenty-five per cent in two hours. He was given a treatment of a carefully selected diet and hot air baths. After three days his condition began to improve and co-incidentally

the phthalein output on five subsequent occasions from February 2nd to March 1st showed a gradual increase up to forty-five per cent.

This case is cited merely to show how closely the elimination of phenolsulphonephthalein follows the clinical manifestations of renal insufficiency.

CASE VI—Miss A. B. Diagnosis; movable kidney, hydronephrosis.

Complaint—For several years patient has had severe attacks of acute abdominal pain somewhat localized to the left hypochondrium, often accompanied and relieved by the passage of large amounts of urine. On abdominal examination a freely movable left kidney was plainly palpable.

Cystoscopic examination November 8, 1912, revealed a bladder having a capacity of eight ounces and presenting practically a normal mucosa. Pelvic distention of the diseased kidney by means of methylene blue solution revealed a capacity of 120 c. c. Radiography following the injection of collargol indicated the renal pelvis markedly distended. Urinary examination was negative and cultures from both kidneys sterile.

Phthalein test showed an elimination by the diseased kidney of thirteen per cent in two hours, and thirty-one per cent by the normal organ.

By reason of the tremendous capacity of the renal pelvis in this case it being six times greater than normal the surgeon knew that the kidney parenchyma was largely destroyed. Nephrectomy was performed December 1, 1912, and one week later the remaining kidney eliminated forty-one per cent of phthalein, an increase of ten per cent over its former capacity.

CASE VII—Mr. J. S. Diagnosis; unilateral renal tuberculosis.

Complaint—Patient had gonorrhea in 1900, was subjectively cured and has had no trouble since. About January 1, 1912, he began to have severe pain in right flank radiating down along course of the ureter.

Physical examination showed marked rigidity and tenderness over region involved.

On cystoscopic examination the bladder was found to have a capacity of four ounces. Mucosa was injected and presented moderate ulceration in the neighborhood of the right meatus, the left meatus was apparently normal.

Urine from left kidney was negative, that from the right showed many white and red blood cells and tubercle bacilli, and produced typical tuberculous lesions in guinea pigs following inoculation.

Phthalein test showed an elimination of twenty-two per cent by the well kidney in an hour and only eight per cent by the diseased organ in the same time.

The high relative output of the healthy kidney warranted nephrectomy. The typically tuberculous kidney was removed March 11th, and one week later the remaining organ was eliminating forty-two per cent of phthalein.

CASE VIII—Mrs. A. B. T. Diagnosis; hydronephrosis, chronic pyelitis, colon infection.

Complaint—For past six years patient has had pain in right costovertebral angle transmitted to region of right thigh. Urination was frequent and many times urgent. Condition has been steadily growing worse. On physical examination the lower pole of right kidney is palpable, extremely tender and accompanied by considerable muscle spasm. The cystoscope indicates a slight injection of the mucosa at the base of the bladder and reveals turbid urine spurting from the right meatus. This contains numerous pus cells and cultures show colon bacilli.

The diseased kidney eliminates twelve per cent and the well organ thirty-five per cent of phthalein in two hours. On removal the kidney presented hydronephrosis and chronic pyelitis. A week following operation the remaining kidney eliminated seventy-two per cent of phenolsulphonephthalein.

CASE IX—Mrs. F. Diagnosis, multiple renal calculi, pyonephrosis, colon infection.

Complaint—In 1908 patient commenced to have considerable pain in left flank, accompanied by the presence of microscopic blood in the urine. Pain and haematuria until July, 1911, and then disappeared. In March, 1912, pain returned and operative interference was advised.

On physical examination a tender, elongated, resistant mass was plainly palpable in the left hypochondrium, extending beyond the free costal margin.

Vesical examination was negative.

Urine from the right kidney contained few red blood cells, epithelial cells and occasional granular casts. From the left kidney all that could be obtained was a small amount of cloudy fluid thickly filled with pus cells. The right kidney eliminated forty per cent of phthalein in two hours, while from the left not the slightest trace of the drug could be obtained.

Nephrectomy was performed April 13, 1912. The kidney proved to be a distorted mass eleven inches in length and four in width, filled with numerous large size calculi and thick yellowish pus with no true renal parenchyma. Eight days following operation forty-two per cent phthalein was eliminated.

Conclusions.

From the weight of clinical evidence it would appear to us that phenolsulphonephthalein is the most reliable agent that we have for estimating the true renal function. The test is a procedure hardly more complicated than a careful gastric analyses, and should take not more time to perform. We venture to forecast that the time is not far distant when the estimation of renal

function by means of phenolsulphonephthalein will be a most valuable adjunct to the diagnostic armamentarium of the scientific internist, on an equal par with sphygmomanometry and ophthalmoscopy.

We wish to thank Drs. Hun, Ball, MacFarlane, T. L. Carroll, Van Rensselaer and O'Brien for the use of clinical material. The surgical cases are from the clinic of Dr. A. W. Elting.

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ACUTE THYROIDITIS AS A COMPLICATION OF ACUTE TONSILLITIS.

Read Before the Medical Society of the State of New York at the Annual Meeting, held at Rochester, April 29 and 30, and May 1, 1913.

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During the past ten years a number of cases of acute thyroiditis, seven in all, have come under the writer's observation. This may not appear to be a large number, but acute thyroiditis is a fairly uncommon and interesting condition, and for that reason a paper on the subject may be timely.

The writer's cases are of particular interest from an etiological standpoint, as in all except one case, the inflammation of the thyroid gland occurred with or directly after attacks of tonsillitis.

Four of the patients have been seen from time to time during a number of years, and the writer's observations are particularly based on these cases. Two of these patients have each had two

distinct attacks of acute thyroiditis, each time with an acute tonsillitis, and both have since developed well-marked diffuse goitres.

In both these cases as well as in all of the cases reported in this paper, the inflammation of the thyroid occurred in a previously healthy gland of normal size. For this reason and because in no case did suppuration occur, the cases belong in the class described by Mygind and other authors under the name "thyroiditis acuta simplex," particularly to distinguish them from cases of acute strumitis in which the disease involves the already hypertrophied thyroid gland.

Suppuration occurs much more frequently in this class of cases, and they are not as uncommon, occurring sometimes with pneumonia, measles, typhoid fever, influenza, diphtheria, etc.

The writer's patients were all girls and young women, and a search of the literature shows that this is true in the majority of the cases. The only case that did not occur with tonsillitis was one that developed during the course of a pneumonia.

A point of particular interest is the fact, that two of the patients have since their attacks of acute thyroiditis developed well-marked goitres.

Two others had attacks of hyperthyroidism with all the typical symptoms, developing soon after the attacks of acute tonsillitis and thyroiditis.

I do not wish to be understood as emphasizing the above facts as being important etiological factors in the development of goitre, but it is by no means impossible, that the repeated inflammatory attacks the gland was subjected to in the two cases before referred to, may have partly at least been responsible for the subsequent chronic hypertrophy of the gland.

S. P. Beebe (1) in an interesting paper in the *New York State Journal of Medicine* states, that "a considerable number of these patients have tonsils and adenoids, and an acute attack of hyperthyroidism may follow promptly an acute attack of tonsillitis."

He also says "that these patients often give a history of repeated attacks of acute tonsillitis preceding the development of a goitre, and that any acute throat condition should be avoided."

Lücke (24) has given perhaps the best description of acute inflammations of the healthy thyroid gland. He divides them ac-

cording to their etiology into three forms, the idiopathic, traumatic and metastatic.

A classification of acute suppurative thyroiditis and acute simple thyroiditis is more practical, however, and has been adopted in the writer's paper.

Acute simple thyroiditis which runs its course without suppuration is a rare disease, and a *primary* acute inflammation of the thyroid gland is declared by Ochsner and Thompson in their classical work "The Surgery and Pathology of the Thyroid and Parathyroid glands," to be so rare that it is almost never seen. I have been able, however, to find a few cases in the literature which will be referred to.

I would again emphasize the necessity of distinguishing between the cases of inflammation of a previously hypertrophied gland, strumitis acuta, which is not so uncommon particularly where goitre is endemic, and the cases of acute inflammation of a previously healthy gland. There is some confusion in the literature in this respect, as several authors have used the terms incorrectly.

Simple acute thyroiditis must also not be confused with acute hyperaemia of the thyroid gland, such as is seen in anomalies of menstruation and acute infectious diseases. It is not uncommon in measles epidemics, particularly in Switzerland, where goitre is endemic.

Symptoms.—The symptoms in cases of acute thyroiditis are quite characteristic. A symptom, and one causing the patient perhaps the most discomfort, is the dysphagia, which is practically always present. This difficulty in swallowing, which is largely mechanical, due to the compression of the esophagus, is most marked when the swelling of the left lobe of the thyroid is very decided, because the esophagus is closer to the left lobe than to other parts of the thyroid. The dysphagia, as in cases three and four (writer's), is sometimes so great that for several days it is difficult for the patient to even swallow liquids. The writer is, however, of the impression that if some of the cases of acute thyroiditis are carefully studied, it will be found that the dysphagia is partly at least caused by the intense acute angina, which often precedes the attack, and will be found more frequently than the reported cases indicate.

Acute thyroiditis is accompanied by a more or less acute congestion and swelling of the mucosa of the upper air passages, and the dyspnoea which is also a frequent symptom, is caused by both the compression of the trachea by the greatly swollen thyroid, and the congestion of the tracheal mucous membrane.

A good many of the cases start with a chill, headache, prostration and other symptoms of an acute infectious process. There is always an elevation of temperature, but this is rarely either very high or prolonged, except in the cases that go on to suppuration. The swelling of the thyroid varies but is usually considerable—and there is sometimes considerable congestion of the surrounding parts.

WRITER'S CASES.

CASE 1. Miss L. B., age 20 years, came into the Nose and Throat Clinic at St. Peter's Hospital in 1906 with history of sore throat for several days. On examination a typical acute follicular tonsillitis was found. The thyroid gland was greatly and uniformly swollen with some redness of the skin and very tender to the touch. This developed during the third day of the tonsillitis, and the patient stated that the gland was not enlarged before her attack of tonsillitis. The swelling of the thyroid increased during the next two days and there was some dyspnoea undoubtedly caused by tracheal compression. Deglutition was very painful, but there was not as much dysphagia as in some of the other cases, perhaps because the left lobe of the gland was not more involved than the other parts.

Temperature was 103° F., for several days. The usual treatment for the tonsillitis was given, and an ice coil was kept around the neck constantly until the swelling of the thyroid gland subsided, which was in about a week. The temperature gradually dropped, being normal within a week and remaining so.

Patient would not consent to a tonsillectomy, and the following winter came to the clinic with a similar attack, running the same course and again developing with an acute tonsillitis.

This patient came to the clinic at regular intervals during the next two years, and while there were no further attacks of acute thyroiditis, she developed a gradually increasing diffuse goitre. It is at least possible that etiologically there is a connection between her attacks of thyroiditis and the subsequent hypertrophy of the gland. There is no doubt that the infection of the gland was each time caused by the acute tonsillitis.

The only internal medication that this patient and in fact all the writer's patients received, was calomel in the beginning of the attack, and urotrypin in large doses freely diluted.

Just how much good urotrypin did these cases I am not prepared to say. Many good results are reported from its use in acute processes of the upper air passages.

As before stated, none of the writer's cases went on to abscess formation in the gland. The constant use of the ice coil was of the greatest service and reduced the acute congestion of the gland very promptly in all cases.

CASE 2. Young woman, married, age 22 years. Same history as in preceding case. Acute thyroiditis developed during an attack of acute tonsillitis, and the development of the attack could again be observed from the beginning. The thyroid was greatly congested and extremely sensitive to pressure. Dysphagia and dyspnoea as in the last case.

Cold applications to neck again reduced the swelling of the thyroid quickly, and this subsided with the improvement of the acute angina, showing an undoubted connection between the two conditions. She was practically well in ten days, and I did not see her again for about two months, when she came to the clinic with typical symptoms of hyperthyroidism.

CASES 3 and 4. Both young women ages 21 and 24 years, respectively, unmarried. Both stated that before the present attack they had had no enlargement of the thyroid.

One patient was just getting over a severe attack of acute tonsillitis, and the other was still having an acute attack. In both, the thyroid gland was greatly swollen and extremely sensitive to the touch.

The dysphagia in both cases was extreme, so that for several days liquids could be swallowed with great difficulty. There was also great dyspnoea for two or three days. The ice bag with the treatment used in the other cases, reduced the inflamed thyroids quickly.

Temperature for four or five days was 103° F., and they were very ill with chills and great prostration.

CASE 5. Mrs. J., aged 25 years. I was called to see this patient by her attending physician, for a swelling of the thyroid, which developed after the crisis of a pneumonia. The swelling increased rapidly for several days, and there was the usual great tenderness. The throat was reddened, but there was no history of an acute angina. Her physician stated that her thyroid had been entirely normal before the pneumonia. The attack ran the usual course of about ten days, and yielded to the same treatment.

CASE 6. Miss A. S., aged 19 years. First seen in January, 1908. Had had a very severe acute tonsillitis a week before I saw her, and developed the acute thyroiditis immediately after the attack.

The attack ran the usual course, and a year later another acute thyroiditis came on with an acute follicular tonsillitis. This patient has been under observation continuously, and has developed a well-marked diffuse goitre, which started about six months after her last attack of thyroiditis.

CASE 7. In the seventh case, that of a woman, aged 30 years, a very severe acute thyroiditis came on directly after an acute tonsillitis. There was a good deal of dyspnoea and dysphagia in this case, and within a few months after the attack, she developed a typical condition of hyperthyroidism.

Of the cases found in the literature on the subject, I could

find only the following references to acute angina, as a cause for acute thyroiditis:

Lewis and O'Neil (2), who reported severe pharyngitis and great pain in swallowing for two weeks, with the attack.

V. Handing's case (12) and Ewald's contribution (14). Ewald calls attention to the fact, that the inflammation of the thyroid may follow inflammatory processes of neighboring parts, and particularly acute sore throat.

Denger and Pieri (8-5), have described the relation of acute thyroiditis and Graves' disease. Pieri has collected six cases, and Denger has reported seven cases.

Primary cases. The primary cases are the rarest of all, and there are only a few in the literature.

The youngest case on record (primary) is that reported by Carpenter (11), in a boy fourteen months old.

Goldberger (4), Weber (9), and Burk (7), have also reported primary cases.

The above cases, so far as I could determine, were non-suppurating cases, and following are the only other authentic cases belonging in this classification, that I could find. In all of them the thyroid had been previously healthy. They have been reported by Cruvelhier (25), Bauchet (26), Brieger (28), Koppe (27), Barlow (29), Given (30), Chariot (31), Korányi (32), and Zezas (33).

In these cases the ages of the patients, mostly women, were between 20 and 30 years, with the exception of Barlow's case, which occurred in a child three years old.

Mygind's case (23), followed a nasal infection terminating in erysipelas.

Diphtheria was responsible for the inflammation of the thyroid in Brieger's case, typhoid in Korányi's, and malaria in Zezas'.

Of the other cases in the literature, Schwerin (6) has reported two cases of the non-suppurative type of thyroiditis, and Collet (3), has reported a case with whooping-cough, in a child eighteen months old. An abscess formed in this case, and it is one of the youngest cases on record.

Sabitt (10) has reported thirteen cases from the Genf Clinic including one of his own. He states that cases occurring with pneumonia are usually mild. When bacteriological findings were positive pneumococci were found in 44.82 per cent of the cases.

Kyle (13) has reported two cases of the thyroiditis simplex type, both in young men aged 24 years. He found in both cases changes in the blood, increase in fibrin, and diminished function of the red blood corpuscles.

The following were also found: One reported by Bruney (16) following pneumonia, one after influenza reported by Browne (17), one by Smeeton (18); two after influenza by Kiffen (19) and Ismet (22), and one by Robertson (20), following diphtheria in which an abscess formed.

Bauer (21) has reported three cases during the course of scarlet fever.

A study of the reported cases shows, that in a fairly large percentage, the inflammatory attack involved a gland that had been chronically enlarged, also that the majority of the cases occurred with, or followed acute diseases such as diphtheria, scarlet fever, influenza, pneumonia, etc. Exclusive of the writer's cases there were only a few cases reported as a result of tonsillitis.

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FIRST REPORT OF THE MEDICAL INSPECTOR OF
SCHOOLS TO THE BOARD OF EDUCATION,

ALBANY, N. Y.

By CLINTON P. McCORD, M. D.

*To Dr. C. Edward Jones, Superintendent of Schools, Albany,
N. Y.*

DEAR DR. JONES.—I have the honor to submit to you this, my first formal report of the work of medical inspection.

On March 17, 1913, the Board of Education made medical inspection a reality in the educational system of Albany by the appointment of a "full time" medical inspector. On March 27th, by the appointment of four registered nurses as assistants, the Board gave medical inspection its greatest single instrument for effective work—the school nurse.

The medical inspector began work on March 18th and the nurses on April 1st. The reports of the nurses, which are in part incorporated in this report, cover the time from April 1st to the close of school, June 20th. As the nurses are employed for twelve months with provision for a month's vacation, there remain approximately five weeks of the summer season to be devoted to their duties in the system. A portion of this time this summer will be devoted, in the case of two of them, to attendance upon the National Convention on Public Health Nursing at Atlantic City, as voted by the Board at their meeting on June 2nd, and by the other two in compilation of data and in such office work as may be on hand during the latter part of June and the first week of September. During the month of duty in the summer the nurses will make home visits in the cases requiring "follow up" work, which have accumulated during the last six weeks this spring. The reports of this visiting will be filed in writing at the office of the Inspector every week during the summer and will be entered upon the record cards for defective children. It is hoped that many of the cases tabulated on these cards now as "not treated," or "promises," will be listed as "cured," "glasses," "operation," etc., after the nurses have had a month in which to visit and concentrate thus upon one thing—urging parents to take their children to their doctors.

Many of the cases listed as "promises" will be cleared up during the summer by more extended treatment, a number of the physicians having advised that operation be postponed until the vacation season.

In approaching the problem of initiation of the work at a time in the school year which offered but a few months for work, it was necessary to decide upon a plan of procedure which would do the most good to the greatest number of children and at the same time would furnish data that would fit into the general scheme of work next autumn; in other words, to cover the most ground this spring without interfering with a systematic plan of records for the future. It seemed that these purposes would be best accomplished by:

1. Making examinations of the worst miscellaneous cases, so far as time permitted, in all sections of the city. This would bring a portion of the children most in need of attention to medical notice at as early a date as possible. The fact that the examinations were made in all sections of the city would render valuable data upon which to base plans for future work, furnishing us with information of value from an administrative standpoint and for comparative studies, early in the history of the system.

2. An examination of the First Grade children throughout the city for defects of eyes, ears and teeth plus a complete examination of as many of these First Grade pupils as was possible in the time that remained. To set forth the details of the daily routine is not germane to a report of this character. Many items of the nurses' reports have a bearing on local problems or on some limited phase of the work. These are figures of value only when some special study is in progress or when information is desired about a definite field of work. The particular records containing the desired material may then be consulted. Such matters as the prevalence of certain defects in certain grades, certain defects in conjunction with other defects, etc., are among the details set forth in the sectional reports. They have no place in a general report, as they only serve to make it complex and are of no interest except to a student of some special problem. The facts that are of general interest are those

which set forth the work accomplished in a quantitative fashion with special reference to results achieved.

This exposition is best effected by a tabulation such as the accompanying one:

Schools in which the work was conducted: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11 Annex, 12, 13, 14, 15, 16, 17, 20, 21, 22, 24.

Each nurse worked in a definite district with a given number of schools. The Inspector worked in any school where the nurse had gathered enough cases to furnish half a day of work. Any overlapping of work on the part of Inspector and nurse implied in the above paragraph had a definite purpose at the start of the work but will not exist in the plan for the full year's work, beginning in the autumn. Accurate records were kept of every child examined, the disposition of the case and the final result as to whether or not treatment was secured.

Number of school visits made by nurses.....	539
Number of school visits made by Inspector.....	105
Number of pupils examined by nurses.....	2,861
Number of examinations made by nurses.....	3,165
Number of pupils referred to Inspector.....	1,435
Number of those referred that received notification cards	1,086
Whole number of pupils receiving notification cards.....	1,355
Whole number of cards of notification sent.....	1,557
Number of pupils excluded (pediculosis not included)...	17
Total number of home visits made by nurses.....	39
Number of talks by nurses to groups of children.....	48
Total number of defective children (exclusive of cases of decayed teeth or pediculosis alone).....	1,441
Number of these cases having one defect.....	639
Number of them having two defects.....	449
Number of them having three defects.....	208
Number of them having more than three defects.....	145
Total number of defects found (exclusive of decayed teeth and pediculosis).....	2,809

The principal defects and diseases of school children fall under the following headings:

Eyestrain, including defective vision.

Enlarged tonsils.

Nasal obstruction.

Defective hearing and discharging ears.

Decayed teeth.

Poor nutrition.

Orthopedic defects.

Nervousness

Enlargements of lymph nodes.

Skin diseases, including parasitic diseases.

Mental deficiency.

The contagious exanthemata.

Decayed teeth are found so generally, particularly in the lower grades, that distinction should be made between children having only this defect and those having one or more of the less common defects. This distinction has been observed in this report.

CLASSIFICATION.

Under miscellaneous cases of interest might be mentioned the following: One case of hemiplegia, one case of achondroplasia, two cases of ichthyosis, one case of traumatic synovitis, one case of fracture of the radius, one case of aniridia, one of simple and two of double coloboma and one case of psoriasis.

TEETH.

Number of pupils having decayed teeth	1,613
Number of pupils having more than two decayed teeth.	1,136
Number of pupils having faulty occlusion of marked degree	62
Number of pupils receiving dental notification cards....	683
Number of pupils treated for bad teeth.....	24

It is evident that the response to dental notification cards has been comparatively slight. This is due in part to the lack of appreciation on the part of many people of the dangers of defective teeth. Many of the pupils with decayed teeth are naturally in the lower grades and many people still cling to the old fallacy that a child's first teeth are not worthy of attention, and what is even more serious are blind to the possible effects of a mouthful of decaying material. However, out of the great number of pupils with uncared-for teeth there are many cases where the element of expense keeps these children from receiving the dental attention which they so sorely need. It would seem that the need of a dental clinic is most evident, and we earnestly hope that some way will present itself through which a measure of carefully regulated dental work may be carried out under the system of medical inspection, as has been done so excellently for some years in Rochester and many other cities.

SCALP.

Number of cases of pediculosis seen by nurse.....	159
Number of these cases bad enough to be excluded.....	44
Number of the excluded cases cured.....	39

In a report such as this it must be remembered that many of the children classified in the foregoing tabulation had three or four defects each, while a few had as many as six defects each. Distinction must therefore be made between the number of cases of each defect and the number of pupils examined in determining the list of defects.

Number of pupils receiving notification cards for eyestrain and defective vision.....	630
Number of pupils that have secured eye-glasses.....	63
Number of pupils receiving notification cards for defects other than bad teeth.....	774
Number of pupils that received treatment.....	200
Number of pupils not treated.....	574
Number operated upon for defects reported.....	15
Number of children whose throats were "cultured".... (From this number two were excluded as "carriers.")	49
Number of first grade children examined for defects of eyes, ears and teeth.....	1,524
Number of these pupils receiving complete examination.	246
Number of first grade pupils found defective (exclusive of those with decayed teeth alone).....	378
Number of these first grade children receiving notification cards (exclusive of those notified for teeth alone).... (These represent eye defects chiefly as evident from a study of the last two statements.)	370

Distinguish between defective children and children with defect sufficient to warrant a card of notification.

During the spring the inspector has seen several cases of German measles and infectious erythema, but no plan was devised this term for the securing of accurate statistics along the line of the acute infections. Since the whole field of contagious diseases constitutes only $\frac{1}{2}$ to 4% of the scope of medical inspection, and since the curve for such infections is low in the

late spring, this matter was put aside for more important things at the beginning of inspection in this city. It is our hope, however, to pursue a plan next autumn whereby an approximate idea of the occurrence of these diseases in the schools may be secured. So far as the more serious infections are concerned, a most satisfactory arrangement exists with the city health officer, whereby all such diseases recorded at the office of the board of health will be received by telephone at the office of the medical inspector and there tabulated in reference to the schools.

This will shorten by a day the length of possible exposure of the school children to these diseases in school, and will enable the inspector promptly to adopt measures along preventive lines.

It will be noted that out of 774 pupils with defects for which notification cards were sent, 200 or a little over 25% received treatment. This of course is good, but is in no way a correct index of the actual results, since over one-half of the 774 notified received their cards within the last four weeks, many of them within the last week, and there has therefore been little time for action on the part of parents, and no home visiting indicated for the nurses. This means that the 200 cases treated represent a certain per cent of less than half of 774 cases notified. With the probability of the response from the parents receiving cards the last few weeks being equal to that from those notified earlier, it is evident that the results upon *completion* of this spring's records will average something over 50%. When the fact that the nurses will together make about 528 home visits during the summer, compared with 39 this spring, it is reasonable to suppose that results will be secured in proportion by reason of concentration along the one line of endeavor—to have the children taken to their physicians.

Ninety-two parents have promised definitely to take their children to their physicians during the summer. These factors must all be considered, and results doubtless will fall somewhere between 60 and 80% by the opening of the schools in September.

We would respectfully call attention to the fact that there are mentioned in this report 113 "special case" children, 89 of whom are 4 years or more behind grade, 7 being 6 years, 3 being 8 years, and 1 being 12 years behind. In 6 there is a

definite history of epilepsy and in 4 a history of insanity. The picture of sixteen and eighteen-year-old boys in classes of first grade children is indeed deplorable, but quite as bad, so far as the effect upon other children is concerned, are the 146 pupils who are three years or more behind grade. Some of these are doubtless "environmental" cases, but 78 of them are so evidently "special case" children that no special knowledge is required to recognize them as such. The parents of some of these pupils realize that they are backward, and in one instance the father of two such children asked the principal whether or not there was a probability that the school authorities would make provision for special training of such children.

The number of "special" children revealed by the inspection this spring probably represents over half of the entire number in the schools of the city, since special effort was made to locate these cases this spring, and the principals and teachers co-operated in bringing to the inspector's notice the children who were very backward, so that a general diagnosis might be effected. A certain additional number however are certainly in the grades, unrecognized, and these will be brought to light in the progress of routine examination. They are recognizable only by a specially trained observer. Subsequent special tests are also required for a diagnosis.

In view of the foregoing facts we respectfully suggest the urgent need of a start being made in the matter of special training for at least a portion of this number of children, that experience and scientific investigation have shown are not capable of profiting by the regular work of the schools. This training should be along special lines and would demand for its effectual application teachers with special training or peculiar fitness for the work.

During the spring the nurses have given 48 talks to groups of children upon the importance of seeing their physicians in reference to defects reported, and upon questions of general hygiene. They attended the State Conference on Child Welfare held under the State Department of Health at the Capital building on June 12th. Miss Breed of the Co-operated Charities very kindly lectured to them late in April on some of the relations of the organized charities to the work of a school nurse.

The inspector during the spring spoke to two mothers' meetings, to the grade teachers and gave nine lectures to the nurses along the lines of eugenics, the "special" child, home visiting and the routine of school nursing. He is on the staff of the Vineland Training School for a part of the summer and is on the program of the International Congress on School Hygiene at Buffalo for a paper on Health Direction in the Public Schools. We are also sending a chart exhibit to this Congress as a unit of the State Education Exhibit. Our exhibit will aim to be suggestive to authorities of cities of 100,000 or less,—the cities which in greatest numbers will introduce medical inspection within the next few years.

Your inspector has just had the pleasure of completing his work as English Editor of Speech Defects in School Children, a part of the 8th volume of a German work on children's diseases of which Dr. H. L. K. Shaw, State Pediatrician, is Editor-in-Chief. This translation should furnish abundant material for teachers who are interested in the improvement of the speech of certain of their pupils.

This report indicates 53 pupils who had marked speech defect out of 1,435 seen by the inspector this spring. Some of these cases represent common types that are cured by a couple of weeks of simple training, but a number of them are cases that should be separated from normal children and should have the advantage of a special teacher in speech training for a considerable period of time. The evil results of permitting these pupils to continue in the same classes with normal pupils lie in the bad example to their classmates as well as the pronounced nervous strain upon the affected children. In many of these pupils the speech defect is only one of several manifestations which mark them as "special case" children. A few of them should be considered by their physicians.

RECOMMENDATIONS.

1. That provision be made for the proper training of the "special case" child.
2. That arrangements be effected whereby the teeth of children unable to pay for private dental work may be properly treated free of charge, or, at a minimum of expense.

3. That certain suitable teachers be designated to perfect themselves to some degree in the methods of training children who have the more common and easily cured speech defects, so that the majority of cases of this type may be promptly corrected and these children saved the nervous strain and retardation that frequently accompany the condition when allowed to persist for any considerable time.

SUMMARY.

In a report of this extent it is quite impossible to set forth the relations of all the phases of the work, to discuss the significance of each set of figures. The questions which are frequently uppermost in the minds of the majority of people are those which deal with the positive aspect of things. It often is interesting to be able to point to definite things actually accomplished and stated in simple fashion. To this end a summary as follows is valuable:

In all, 2,861 pupils have been examined.

Cultures have been taken of the throats of 48 pupils.

Five hundred and thirty-nine school visits and 39 home visits have been made by the nurses and 105 school visits by the inspector.

Sixty-one pupils with contagious and parasitic diseases have been excluded from contact with other children until cured.

Eighty talks have been given by the nurses and inspector.

A system of scientific records has been established.

Thirty-nine cases of pediculosis have been cured and improvement secured in over a hundred others.

Two hundred children have received medical treatment from their physicians.

Sixty-three children have secured eye-glasses.

Ninety-two parents have promised definitely to take their children to their family physicians this summer.

Twenty-three have had dental treatment.

Fifteen have been operated upon for defects reported.

These positive results have been secured only by a combination of forces. The untiring energy, keen observation and wholesome enthusiasm of the staff of nurses have been joined by the cordial interest and help of the principals and teachers throughout the city, the hearty response of the parents and the real and earnest

co-operation of the family physician. To all of these we are most grateful. We also wish to express to the Board of Education and to the Superintendent of Schools our appreciation of the privilege of working under conditions so pleasant and harmonious. Personally, I wish to thank you, and through you the gentlemen of the Board, for the unvarying courtesy and kindly encouragement accorded me, particularly in the trying work of initiation of a system new to the city.

Respectfully submitted this 20th day of June, 1913.

CLINTON P. McCORD, M. D.,
Medical Inspector of Schools.

Editorial

The tramp had succumbed, and was gone into hospital to die there. He sent for Ned and the young man went to see him.

"Times be changed since we used to sit on the green side and tell all the wisdom that we'd gathered up," whispered fading Dick. "I've tumbled down for good and all now, Ned, and all the king's hosses and all Munday's bottles won't set me up again. I shall only tumble down once more, old chap, and that is off this here wonderful bed into my pit. The luxuries of this place! I'm awful sorry I didn't give 'em a call long ago. And the kind hearts here! 'Tis a most remarkable affair, and, Lord knows, I give 'em a lot of trouble, but they make nought of it, and nobody appears to wish to hasten my going by an hour. There's a masterpiece of a nurse what looks after me. A grand wife wasted is that woman."

The Haven.

EDEN PHILLPOTTS.



For so long as that which it has pleased us to Legislation and call civilization has regulated the relations between the individual and society, primarily for the protection of the latter, it has been and is the rule to restrain the insane in some fashion, either privately or in some public institution.

Our changed view-point as to the unfortunate mental incompetent from the original conception is most marked, as all who have at all carefully studied the subject of the care and commitment of the insane to-day must admit if they contrast it with the custom which prevailed (to go back no farther), when the great Pinel struck the shackles from the insane women confined in Salpetrière. Yet upon no subject has there been such diverse and conflicting legislation enacted by the several states which comprise the United States than upon this, not even does the notorious disagreement on marriage and divorce equal it.

It follows naturally that in some states the care of the insane as reflected in their laws is humane, well considered and reflects credit on the commonwealth, while in others the unfortunate is considered as but little, if at all, removed from the criminal and is treated as such. Before this anomalous, not to say barbarous condition can be changed, much new legislation must be had and a careful study of existing laws is the first step. The National Committee for Mental Hygiene which pledges itself "to work for the protection of the mental health of the public and to help raise the standard of care for those threatened with mental disorder or actually ill," has contributed towards this first step in the general desired change, by means of a publication entitled "Summaries of Laws Relating to the Commitment and Care of the Insane in the United States," prepared by John Koren. This publication, as its title indicates, is a summary of the laws in all the states, has copious marginal notes which make possible a ready reference to the statutes. The work is certainly, of the first importance and reflects credit not only upon the individual who collected and prepared the matter but upon the humane motives of the society which made such work possible.

SPENCER L. DAWES.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, JUNE, 1913.

Deaths.

Consumption	21
Typhoid fever	2
Scarlet fever	0
Measles	0
Whooping-cough	0
Diphtheria and croup.....	1
Grippe	1
Diarrheal disease	6
Pneumonia	5
Broncho-pneumonia	5
Bright's disease	24
Apoplexy	10
Cancer	11
Accidents and violence.....	13
Deaths over 70 years.....	24
Deaths under 1 year.....	24
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Total deaths	167
Death rate	20.30
Death rate less non-residents.....	16.05

*Deaths in Institutions.*Non-
Resident. Resident.

Albany Hospital	14	13
Albany Orphan Asylum.....	0	0
Child's Hospital	1	0
County House	0	1
Home for the Friendless.....	0	0
Homeopathic Hospital	8	3
Hospital for Incurables.....	0	0
Little Sisters of the Poor.....	0	1
Public places	3	3
St. Margaret's House.....	5	1
St. Peter's Hospital.....	14	2
Austin Maternity Hospital.....	0	0
Albany Hospital, Tuberculosis Pavilion.....	1	6
Labor Pavilion	1	0
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Totals	47	30
Births	141	
Still Births	13	
Premature Births	6	

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

Typhoid fever	5
Scarlet fever	9
Diphtheria and croup.....	28
Chickenpox	8
Smallpox	0
Measles	10
Whooping-cough	1
Consumption	29
 Total	 90

Contagious Disease in Relation to Public Schools.

	Reported.	Deaths.
	D. S. F.	D. S. F.
Public School No. 1.....		I
Public School No. 3.....		I
Public School No. 4.....		I
Public School No. 7.....		I
Public School No. 15.....		I
Public School No. 16.....		3
Public School No. 17.....		I
Public School No. 24.....		I I
St. Joseph Academy.....		I
Lady of Angels School.....		I

Number of days quarantine for scarlet fever:

Longest..... 38 Shortest..... 2 Average..... 13 13/20

Number of days quarantine for diphtheria:

Longest..... 24 Shortest..... 11 Average..... 16 3/5

Fumigations:

Houses.....	60	Rooms.....	213
Cases of diphtheria reported.....			28
Cases of diphtheria in which antitoxin was used.....			27
Cases in which antitoxin was not used.....			1
Deaths after use of antitoxin.....			2

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive	13
Negative	25
 Total	 38
Living cases on record June 1, 1913.....	302

Cases reported during June:

By card	21
Dead cases by certificates.....	8
	—
Total	29
Dead cases previously reported.....	13
Dead cases not previously reported.....	8
Removed	6
	—
	27

Living cases on record July 1, 1913.....	304
Total tuberculosis death certificates filed during June.....	21

Out of town cases dying in Albany:

Albany Hospital	1
Albany Hospital Camp.....	6
	—

Net city tuberculosis deaths.....	14
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REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	33
Number of cases assigned.....	6
	—

39

Disposition of old and new cases:

Hospital	1
Remaining under supervision.....	38
Number of visits made.....	194

BUREAU OF PATHOLOGY.*Bender Laboratory on Diphtheria.*

Initial positive	30
Initial negative	201
Release positive	46
Release negative	145
Failed	42
	—
Total	464

Test of Sputum for Tuberculosis.

Initial positive	13
Intial negative	31
	—
Total	44

BUREAU OF MARKETS.

Market inspections	113
Public market inspections.....	23
Fish market inspections.....	2
Slaughter house inspections.....	4
Packing house inspections.....	3
Hide house inspections.....	3
Rendering plant inspections.....	2
Fish peddler inspections.....	4

MISCELLANEOUS.

Mercantile certificates issued to children.....	49
Factory certificates issued to children.....	30
Children's birth records on file.....	79
Number of written complaints of nuisances.....	75
Privy vaults	4
Closets	13
Plumbing	14
Other miscellaneous complaints.....	44
Cases assigned to health physicians.....	66
Calls made	123
Number of dead animals removed.....	847

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK.—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR JUNE, 1913.—Number of new cases, 178; classified as follows: Dispensary patients receiving home care, 12; district cases reported by health physicians, 4; charity cases reported by other physicians, 54; moderate income patients, 89; metropolitan patients, 19; old cases still under treatment, 99; total number of cases under nursing care during month, 277. Classification of diseases for the new cases: Medical, 37; surgical, 14; gynecological, 6; obstetrical under professional care, mothers, 52, infants, 48; skin, 1; throat and nose, 1; infectious diseases in the medical list, 19. Disposition: Removed to hospitals, 28; deaths, 10; discharged cured, 125; improved, 19; unimproved, 7; number of patients still remaining under care, 88.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 1; nurses in attendance, 3; patients carried over from last month, 0; new patients during month, 4; patients discharged, 3; visits by head obstetrician, 2; by attending obstetrician, 3; by students, 30; by nurses, 29; total number of visits for this department, 64.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,558; for professional supervision of convalescents, 528; total number of visits, 2,086; cases reported to the Guild by 3 health physicians, and 41 other physicians; graduate nurses 10, and pupil nurses 7 on duty.

Dispensary Report.—Number of clinics held, 86; new patients, 102; old patients, 313; total number of patients treated during month, 415. Classification of clinics held: Surgical, 12; nose and throat, 6; eye and ear, 17; skin and genito-urinary, 7; medical, 12; lung, 7; dental, 0; nervous, 1; stomach, 3; children, 12; gynecological, 9.

AMERICAN ASSOCIATION FOR CANCER RESEARCH.—At the annual meeting of the American Association for Cancer Research, May 5, 1913, the following resolution (the report of the committee on statistics and public education) was unanimously adopted:

It is the sentiment of this association that:

- (1) The present instruction of medical students in the symptoms and early diagnosis of cancer is seriously deficient.
- (2) The medical curriculum should include special lectures in the clinical departments dealing specifically with this subject.
- (3) The universities should provide competent lecturers in this subject to address the local medical societies.
- (4) The associate members of the association should be urged to take up the question of the proper methods of approaching the public on the subject of cancer.
- (5) The activities of this association should at present be chiefly confined to the education of the medical profession.
- (6) This resolution shall be sent to the deans of the medical schools and the secretaries of the State medical societies in the United States and published in the medical press.

FOURTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.—The schedule of papers for the program of the meeting in Buffalo, August 25th to 30th, is now in the hands of the printer. It will contain an announcement of papers for the following sections and sessions.

Section I. The Hygiene of School Grounds, Buildings, Material Equipment and Up-Keep.

Session 1. Room A, Monday, August 25, 1913, 2 P. M., School Buildings and their Equipment. Nine papers.

Session 2. Room A, Tuesday, August 26, 9 A. M., Open Air Schools. Seven papers.

Session 3. Room A, Wednesday, August 27, 9 A. M. and 2 P. M., Ventilation, Heat and Illumination. Thirteen papers.

Session 4. Room A, Friday, August 29, 2 P. M., School Illumination. Eight papers.

Section II. Hygiene of School Administration, Curriculum and Schedule.

Session 5. Room B, Monday, August 25, 2 p. m. and Tuesday, August 26, 9 a. m., Status of School Hygiene and Methods of Instruction in City, Village and Country Schools. Twenty-seven papers. Status of School Hygiene in Women's Colleges. Three papers.

Session 6. Room B, Wednesday, August 27, 9 a. m. and 2 p. m., Instruction in Hygiene. Seventeen papers.

Session 7. Room A, Friday, August 29, 2 p. m., Fatigue and Nervousness Among School Children. Eleven papers.

Session 8. Room C, Wednesday, August 27, 2 p. m. and Thursday, August 28, 9 a. m., Mental Hygiene. Thirteen papers.

Session 9. Room A, Tuesday, August 28, 9 a. m., Play and Athletics. Six papers.

Session 10. Room B, Friday, August 29, 2 p. m. and Saturday, August 30, 9 a. m., School Hygiene in Relation to the Home and the Community. Fifteen papers.

Session 11. Room C, Wednesday, August 28, 9 a. m., Symposium on Mental Hygiene.

Session 12. Room B, Friday, August 29, 9 a. m., Conference on the Binet-Simon Scale.

Session 13. Room C, Friday, August 29, 9 a. m. and 2 p. m. and Saturday, August 30, 9 a. m., Status of Medical Inspection; School Clinics and Nurses. Twenty-five papers.

Section III. Medical, Hygienic and Sanitary Supervision in Schools.

Session 14. Room D, Monday, August 25, 2 p. m. and Tuesday, August 26, 9 a. m. and Wednesday, August 27, 9 a. m., The Exciting and Contributory Causes of Disease in School Children. Thirty-seven papers.

Session 15. Room D, Thursday, August 28, 9 a. m., Crippled Children. Ten papers.

Session 16. Room C, Monday, August 25, 2 p. m. and Tuesday, August 26, 9 a. m., Conservation of Vision. Fourteen papers.

Session 17. Room B, Thursday, August 28, 9 a. m., Health Supervision of University Students. Eight papers.

Section IV. Symposia.

Session 18. Room E, Tuesday, August 26, 9 a. m., 8 p. m. (hall to be announced), and Wednesday, August 27, 9 a. m., Oral Hygiene.

Session 19. Room D, Friday, August 29, 9 a. m. and 2 p. m., School Feeding.

Session 20. Room E, Wednesday, August 27, 2 p. m., Sex Hygiene.

Session 21. Room D, Wednesday, August 27, 2 p. m., Prevention of Tuberculosis.

Session 22. Room E, Friday, August 29, 9 a. m., American School Hygiene Association.

Session 23. Room E, Monday, August 25, 2 p. m., Child Labor Committee.

Session 24. Room E, Friday, August 29, 2 p. m., Society of Directors of Physical Education in Colleges.

Session 25. Room E, Thursday, August 28, 9 A. M., Physical Education Association.

Session 26. Room A, Saturday, August 30, 9 A. M., Women's Clubs.

THE CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.—The fourth annual session of the clinical congress will be held in Chicago, November 10 to 15, 1913.

General headquarters of the congress will be at the Hotel LaSalle, where the eighteenth and nineteenth floors have been reserved for registration rooms, bulletin rooms, etc. Headquarters for the section on surgery of the eye, ear, nose and throat will be at the Hotel Sherman. At each of these headquarters the daily clinical program will be bulletined one day in advance.

On each evening of the week except Saturday there will be scientific sessions and on Tuesday, Thursday and Friday evenings, there will be separate meetings for those especially interested in surgery of the eye, ear, nose, throat and mouth. Prominent European and American surgeons have been invited to read papers and exceptionally attractive programs have been arranged.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—The thirty-fifth annual congress was held in Washington, May 5, 6 and 7, 1913.

The program included the president's address, by Dr. George A. Leland.

Further Observations on Some Anatomic and Clinical Relations of the Sphenoid Sinus and the Third, Fourth, Fifth, Sixth and Vidian Nerves, by Dr. Greenfield Sluder.

The Faucial Tonsil as a Focus for Systemic Infection, by Dr. George E. Shambaugh.

Results in a Series of Cases of Tonsillectomy at the Massachusetts General Hospital, Three to Four Years After Operation, by Dr. J. J. Payson Clark.

Report of a Case of Ulceration of the Larynx, Perichondritis of the Arytenoid Cartilages, Abscess and Partial Exfoliation of Both Cartilages Resulting from Typhoid Fever, by Dr. J. H. Bryan.

Thyrotomy for Cancer of the Larynx, with Report of Eleven Cases, by Dr. D. Crosby Greene.

Decannulation and Extubation After Tracheotomy and Intubation Respectively, by Dr. Chevalier Jackson.

Congenital Occlusion of the Postnasal Orifices, with Report of a Case, by Dr. Charles W. Richardson.

Foreign Bodies in the Esophagus, with Report of Two Cases, by Dr. Cornelius G. Coakley.

Symposium on Phlegmons of the Upper Respiratory Tract, Report of a Case, by Dr. F. E. Hopkins.

Inflammation of the Lateral Columns of the Pharynx Leading to Abscess Formation, with Report of Cases, by Dr. Henry L. Swain.

Phlegmons of the Upper Respiratory Tract, by Dr. John O. Roe.

Report of a case of Phlegmon Starting as a Peritonsillar Abscess and Extending Downward as Far as the Second Ring of the Trachea, by Dr. George L. Richards.

Primary Carcinoma of the Epiglottis, with Report of a Case, by Dr. Emil Mayer.

Nitrous Oxid Gas, Essence of Orange, Ether and Sequestration in General Anesthesia for Operation in the Upright Position, by Dr. Thomas R. French.

Training of the Specialist, by Dr. Thomas J. Harris.

History of a Broncholith, Bronchial Calculus, or Lung Stone, by Dr. Walter F. Chappell.

The Removal from the Esophagus of a Plate of False Teeth Embedded for Eighteen Years, by Means of the Esophagoscope, by Dr. D. Braden Kyle.

Preliminary Report Concerning the Passage of Bacteria Through the Tonsillar Tissue as Determined by Experimental Research, by Dr. George B. Wood.

HOSPITAL NOTES.—Schenectady County, Board of Supervisors on July third appropriated \$10,000 for a twenty bed addition to Glenridge Sanatorium.

Saratoga County has appropriated \$30,000 for a county tuberculosis hospital.

Albany County, The large \$150,000 nurse's home is progressing rapidly.

INTERNATIONAL CONGRESS FOR NEUROLOGY, PSYCHIATRY AND PSYCHOLOGY will be held in Berne, September 7th-12th, 1914.

PERSONAL.—Dr. J. H. BLATNER (A. M. C. '72), has removed from 132 Hudson Avenue to 1040 Madison Avenue, Albany, N. Y.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Principles and Practice of Obstetrics. By JOSEPH B. DELEE, A. M., M. D., Professor of Obstetrics at the Northwestern University Medical School. Large octavo of 1060 pages, with 913 illustrations 150 of them in colors. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$8 net; half morocco, \$9.50.

The purpose of the writer has been to present a treatise of value equally to student and practitioner. With a knowledge of the requirements of each, based upon a wide teaching experience of twenty-one years, the author has proceeded along practical lines.

For concise and systematic presentation of the subject to the student, the work has been divided into four parts; devoted as follows: (1) to

Physiology, (2) to Conduct, (3) to Pathology of Pregnancy, Labor and Puerperium, and (4) to Operative Obstetrics.

Abundant and well-chosen illustrations and diagrams aid the practitioner in diagnosis; the descriptive legends added to those concerned with operative procedures are especially valuable in the conduct of the individual case.

There is little purely scientific and historical discussion; when indulged in, distinctive paragraphing has been employed. References are not abundant but cover the important literature.

The book represents essentially the author's views. Since the latter are based upon an extensive and highly successful clinical experience, the value of the work as a guide to obstetric conduct is enhanced.

The work is large and well printed on excellent paper. It should prove a valuable text-book. Though new, it has no superior as a complete and up-to-date treatise for the general practitioner.

P. T. H.

The Practice of Obstetrics. By J. CLIFTON EDGAR, M. D., Professor of Obstetrics, Cornell University Medical College. P. Blakiston's Son & Co., Philadelphia, 1913.

In its present and fourth edition, this well known work has been subjected to a critical review. Much of the pathology has been revised and rewritten, new illustrations have been added and recent advances in the obstetric art incorporated in the text. Among the especially valuable new topics discussed are pelvimetry of the pelvic outlet, dystocia due to and treatment of deformity of the region.

The work requires no extensive review. None other is both as widely known and, for purposes of obstetric reference, as complete.

P. T. H.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, the Specialties, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M. D. Published by J. B. Lippincott Company, Philadelphia and London. Price \$2. Volume III. Twenty-second Series 1912.

Perhaps the most original article in this volume is from the pen of Prof. Theophilus Ciesielski entitled "How it Happens that the Offspring of Plants, Animals and Man is Sometimes Male and Sometimes Female." The author claims that the freshness or staleness of the spermatozoa is the single factor in sex determination. Semen ejected later than twenty-four hours from the last coitus being deemed stale. Fresh semen produces male children while stale semen produces female offspring.

Breast Malignancy: A plea for early operation and extensive dissection. By Geo. S. Foster, M. D., Manchester, N. H. A complete résumé of the anatomy and physiology of the breast together with a consideration of the pathology and clinical history of malignant tumors. The article is a very readable one and belongs to that ever-increasing mass of medical literature which has for its object the teaching of the one great truth in malignancy where ever found, namely, early diagnosis and radical surgery.

The able surgeon and author John B. Deaner, M. D., of Philadelphia, summarizes "A Year's Work in Appendicitis." He thinks it an encouraging sign of the times that the number of operations for chronic appendicitis exceeds those of the acute disease. He lays great emphasis, based upon his experience, on the avoidance of purgatives and laxatives in acute appendicitis, perforations and general peritonitis being much more frequent where the converse course is pursued.

There are many other able articles more of general interest to the specialist than the general practitioner.

H. D. C.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M. D., Philadelphia, Pa. J. B. Lippincott Company, Philadelphia and London. Volume IV. Twenty-second Series 1912. (The price of this book is \$2.)

This volume contains an unusually large number of practical articles for the general practitioner; among which might be mentioned "Clinical Inferences to be Drawn from the Wassermann Test," by Fredk. Bauermann, M. D., Ph. D., the author incidently going into the comparative value of the mercurial and arsenical preparations. "Enucleation of the Tonsils and Removal of Adenoids by Simple Methods," Curtis C. Eves, M. D., is well illustrated and clear in direction.

"The Use of the Stem Pessary for Amenorrhoea and Dysmenorrhoea," by J. Henry Carstens, M. D., is original in some respects, clearly illustrated and very practical.

A description of the Rockefeller Institute for Medical Research by John Auer, M. D., is very readable and gives one a first class idea of the scientific scope of the institution. The article is well illustrated by half-tone cuts of the buildings both exterior and interior.

Altogether this volume is a valuable addition to one's medical library and offers much refreshing reading.

H. D. C.

OBSTETRICS

Edited by James P. Boyd, M. D.

Progress of the Year in Obstetrics.

Geo. L. BRODHEAD. *American Journal of Obstetrics, Vol. 67, No. 421.*
January, 1913.

Pubiotomy. The operation has inspired an increased interest. In spite of improved technique, as a result of which foetal and maternal mortality has been reduced more than half, the operation is followed by impaired function in a large percentage of cases. Generally accepted as an emergency rather than an elective procedure, it is to be carried out in cases of moderate disproportion in multiparae after attempt at delivery by forceps has been unsuccessful. More than half of the cases of earlier pubiotomy in subsequent labors are delivered spontaneously or by simple operative procedures.

Pituitary Extract. The contractions caused by this agent appear usually within ten minutes, they are essentially rhythmical and of greater efficiency at the expulsive stage of labor. It will not excite labor pains (except possibly at term) and so is of little value in the induction of abortion or premature labor; and its action in the third stage of labor is uncertain. The drug is administered intramuscularly, commonly in 1cc. (.1 Gr.) doses and repeated at frequent intervals until satisfactory contractions have been secured. Reaction varies markedly in different individuals. It probably does raise blood pressure. Although quite generally considered a harmless oxytoxic, cases of tonic uterine contraction from its use are frequently reported.

Extra-peritoneal Cesarean Section. This is essentially a continental operation to be substituted for classical Section in cases where infection is suspected but no temperature has developed. A maternal mortality of 5.5% and a foetal of 2.5% may be expected. Loss of blood is more marked and the foetus is extracted with greater difficulty than in the classical trans-peritoneal operation. With the advantages of each in mind, Polano has proposed trans-peritoneal incision, opening of the uterus at the lowest point on its posterior wall and the institution of drainage from the most dependent portion of the incision.

Half Narcosis with Scopolamin and other Drugs. In an extensive series of cases reported by Zweifel, 85% experienced a satisfactory abolition of pain without any apparent interference with the course of labor by the use of Pantopon Scopolamin.

Biologic Diagnosis of Pregnancy. A simple test devised by Abderhalden promises aid in the diagnosis of the earlier pregnancies. Placental fragments (alien blood) are added to serum from the suspected patient. The ferments generated by such contact give rise to cleavage products which are crystalline and are dialyzed against distilled water. The latter is examined chemically for the presence of certain "disintegration products." The principle has yet to be tested exhaustively, though in no case has a gravida reacted negatively.

Induction of Labor with Foetal Serum. A series of nineteen cases treated by injection of foetal serum, according to Heida, is interesting. Contractions occurred invariably soon after injection but were not painful. Seven negative cases presented no more untoward symptoms than nausea, vomiting, moderate precordial pain and oppression.

Vaccine Therapy. Interest in this subject continues. In the less severe septic conditions, benefits will increase as the indications for the use of vaccines and their dosage are better understood.

Eclampsia. Abroad, highly satisfactory results are attending the employment of the so-called "Stroganoff conservative treatment." The essentials are restriction of the metabolic processes to the minimum, elimination, and extraction of the foetus when the soft parts are sufficiently dilated. A maternal mortality of 6.6% under those conditions is to be contrasted with one of 17.2% in a large series of continental cases where the uterus was emptied at the earliest possible moment and by the most rapid methods. In this country, the employment of vaginal Cesarean section after the first convulsion in ante-partum eclampsia has enthusiastic supporters. The author is of the opinion that the operation should be reserved for those cases in which an attempt to dilate the cervix by the use of an elastic bag has failed.

P. T. H.

Pituitary Extract in Uterine Inertia.

O. PAUL HUMPSTONE. *American Journal of Obstetrics, Vol. 66, No. 417. September, 1912.*

The use of the posterior portion and infundibulum of the pituitary body as a stimulant to uterine muscle is recent. The therapeutic value of the agent in shock, uterine atony and intestinal paresis was urged in 1909. A discussion of the subject at the Fifth International Congress of Obstetrics and Gynecology in 1910 stimulated interest in the use of pituitary extract in obstetrics. The Germans have led in its advocacy; they are responsible for a relatively extensive literature upon the subject and are convinced of its definite value in suitable cases. They urge the administration of pituitary extract intra-muscularly in doses of from .5 to 3 Grams. Results of individual operators differ though all find the drug efficient after pains have once started, especially so after the explosive stage has been reached; not a few negative results are recorded; its benefits in post-partem hemorrhage are questionable. Little attention has been paid the subject by the French and practically none by American operators.

In proper dosage and in selected cases, the author is convinced of the value of pituitary extract. The indications for its use are uterine inertia, post-partum hemorrhage, Cesarean section and shock. His observations are based upon its use in 64 cases.

Vaporoles of Burroughs, Wellcome & Co. (.2 Grs. to 1cc.) and "Pituitrin" of Parke, Davis & Co. (.1 Grs. to 1cc.) were employed.

.4 Grs. was administered intramuscularly as an initial dose and repeated at 20-minute intervals; no more than three injections were given before the drug was forsaken. The average elevation of blood pressure was eight points, which persisted for two hours after injection; higher elevations were encountered as the normal blood pressure was lower; the maximum recorded was twenty points. Given in full doses early in pregnancy, the uterus was found to contract but not to evacuate its contents. Similar results were obtained in attempting the induction of premature labor. Especially satisfactory results were secured in uterine inertia developing late in the first stage of labor after obliteration of the internal os and considerable dilatation of the external; pains of greater strength, longer duration and nearer together began within five minutes of injection and often persisted for two hours. Equally gratifying results followed its use in second stage inertia due to lack of moulding and slight disproportion, especially if strychnia grs. 1/20 were administered hypodermically together with the extract.

In third stage inertia, pituitary extract is inferior to ergot since the contractions caused by the former are not tonic; however, they are prompt and for this reason the drug is of value in the treatment of shock accompanying post-partum hemorrhage.

Involution was stimulated rather than retarded by the use of pituitary extract late in labor. The drug was used with brilliant success in several Cesarean sections, being administered at the time of suture and following an injection of ergotole at the beginning of the operation.

P. T. H.

NEUROLOGY

Edited by Henry Hun, M. D.

Encephalomyelitis following Smallpox. (Encephalomyelitis nach Pocken.)

OTTO KLIENEBERGER. *Archiv für Psychiatrie und Nervenkrankheiten*,
50. Band, 3. Heft, 1913.

The patient who gave the opportunity for this observation was a woman of thirty-one years who suffered a light attack of smallpox at about her sixteenth year, and four weeks afterwards developed suddenly paralysis in the right upper extremity and the left lower extremity, and also presented an affection of speech. Speech returned after seventeen days, and this function was completely restored a month later. Paralysis of the limbs also improved greatly, although there was not complete restoration. Ten years later tremor appeared, first in the right upper extremity, then in the left, also in the lower limbs, and finally in the trunk. The intensity of this tremor gradually increased so that she could not write or otherwise control her muscles. She was admitted to the hospital, and the diagnosis of hysteria was made. After her dismissal, the tremor continued in unabated strength. Then after a few

years her hands became thick and large, there were weakness in all of the limbs, headache with occasional vomiting, cutting and stabbing pains in the body, uncertainty in the hands and in walking, dizziness and sleeplessness with occasional roaring in the ears and palpitation of the heart. Then she manifested mental symptoms, as anxiety, terror and irritability. The examination showed a doughy-like consistency of the cheeks and upper eyelids, as well as edematous swelling of the feet and the lower third of the leg. Both hands were distinctly disproportionate in size, markedly thick and large, and suggested a condition resembling elephantiasis. The enlargement of the softer parts was confirmed by the X-ray examination which revealed a normal condition of the bones. The tremors impeding the movement were revealed as described, and there was no affection of the optic discs, and there were also no pathological changes in the reflexes or any other functions.

It is evident that these symptoms could not be attributed to any single lesion of the brain, and the diagnosis lay between multiple sclerosis and encephalomyelitis. For multiple sclerosis several characteristic symptoms were wanting, as nystagmus, changes in the eye-grounds, bladder disturbances and abnormal reflexes; nor is motor aphasia to be regarded as a symptom of this disease. Inasmuch as the clinical symptoms were based upon an infectious or toxic origin encephalomyelitis appeared the more reasonable supposition, and cases of this kind following smallpox have been reported. The disturbances of growth and the abnormal development of the soft tissues are only to be explained on the supposition of some glandular disturbance, perhaps injury to the hypophysis, and this was suggested by the radiograms which revealed a broadening and deepening of the sella turcica. Goldstein has already remarked that a disturbance of the turcicar body need not necessarily indicate a tumor, but may result from a pressure of serous meningitis, which is a kind of secondary hydrocephalus. Such a supposition appears to meet the indications in this case as accounting for the peculiar tremor, which also implies somewhat diffuse disturbance of brain function. The presence of hydrocephalus was further indicated by spasm of the muscles of the neck and by increased pressure of the cerebrospinal fluid on lumbar puncture.

Neurological Indications for Surgical Treatment of the Brain. (Neurologische Indikationen zum chirurgischen Eingriff am Gehirn.)

O. STENDER. *St. Petersburger medizinische Zeitschrift*, 15 December, 1912.

In 1897 von Bergmann established for that period the limitations of brain surgery in the statement that operations upon brain tumors were not feasible beyond the surgery of the central convolutions. In severe cases in which internal medication is helpless, the symptoms include blindness, deafness, loss of speech and pronounced mental defect, all of these factors pointing to a dangerous and destructive brain lesion, which

may indicate tumor, cyst, gumma, tubercle, hematoma, bone-depression, congenital hydrocephalus or meningitis.

With reference to brain pressure the most frequent symptom is headache, which is difficult of diagnosis because there is no form of headache which may not be associated with an affection of the cerebrum. It may be said that those headaches which are progressive in spite of occasional remissions and intermissions suggest an organic basis. Vertigo, vomiting and increased mental dullness are very suggestive, although they must be differentiated from a possible source in disease of the cerebellum or labyrinth, or from some digestive disturbance, uremia or migraine.

The next important diagnostic indication is given by ophthalmic examination, as optic neuritis and choked disc are most important indications of brain pressure, and, furthermore, with progressive blindness, indicate the various stages of the lesion. When surgical intervention is considered, all possibilities of internal medication should have been eliminated. Syphilis of the brain, and diffuse or circumscribed serous meningitis is most apt to be confounded with brain tumor. Brain syphilis is easily diagnosed by the results of treatment, and especially may be determined when a multiplicity of lesions is relieved by the use of mercury, iodide or salversan. In this connection the four reactions of Nonne may be mentioned: Wassermann in the blood serum and cerebrospinal fluid, pleocytosis, cerebrospinal pressure and increased albumen.

The writer calls attention to the danger of lumbar puncture in cases of tumors of the cerebellum, citing the cases of sudden death which have followed this procedure from the loss of mechanical balance existing between the cerebellar fluid and the spinal fluid, which permits the base of the brain to be suddenly compressed in the foramen magnum. The difficulties here are increased by the fact that a distinct benefit follows lumbar puncture in cases of serous meningitis. Two difficulties are encountered: first, the possibility that a tumor may underlie the serous meningitis; and, second, that the cerebrospinal fluid after a moderate removal may be rapidly replaced. Under the circumstances, therapeutic efforts in cases of serous meningitis must be based upon the strength of the patient. In the beginning specific treatment may be tried, and later surgical interference may be largely influenced by the results of ophthalmoscopic examinations.

Epilepsy offers many perplexing indications for treatment, and the differentiation of idiopathic and symptomatic epilepsy is not always easy. Redlich has called especial attention to this and to the great importance of focal symptoms in convulsive or eclampsic attacks. It has been shown that slight local symptoms, not to be observed except on exhaustive examination, such as modifications of reflexes and of strength of muscles, are suggestive of an organic basis. Deformities of the bone and cicatrices are to be considered as possibilities, first if the irritative symptoms are present as local headaches or tenderness; and, second, when local symptoms precede or follow the convulsive attacks. Trephining

under such conditions is recommended. In this connection the work of Alzheimer and Weber is instructive, as they call attention to the production of gliosis in the brain following non-suppurative encephalitis, such as follows influenza.

It appears from all this that a careful discrimination in epileptic conditions enlarges quite extensively the field of brain surgery.

Of the various operations suggested, as aspiration of the ventricle, lumbar puncture and trephining, trephining must be given the first place for its value as a decompressing agent, although it is accompanied by certain dangers even under modern surgical technique.

The Diagnosis and Treatment of Brain Abscess. (Zur Diagnose und Therapie des Hirnabsesses.)

F. HENKE. *Archiv für Ohrenheilkunde, 1912.*

The author's investigations were largely based on cases observed during the past ten years, in the clinic of Prof. Gerber, in Königsberg. Among the cases were nine brain abscesses of otitic origin, of which eight were operated upon. Five of these were in the cerebrum and three in the cerebellum. Three of the five operated cases died, two being complicated by sinus phlebitis and one with meningitis. Two of the uncomplicated cases recovered.

Of the three cases of abscess in the cerebellum operated upon, one case, also complicated with sinus phlebitis recovered, two died as a result of pyemia, and one, reported fully in this article, of respiratory paralysis. One of the most important points in the diagnosis of cerebellar abscesses, is the symptom described some years ago by Babinski. In abscesses in this region of the brain, patients are not able to make certain antagonistic movements (pro and supination) quickly and frequently repeated.

In considering the treatment, the author states that it is of great importance, even after the abscess has been evacuated, to pay close attention to the brain pressure. Lumbar puncture, if necessary, frequently repeated, will tend to greatly diminish the danger of an increase of the brain pressure. In cerebellar abscesses also, this procedure may save the life of the patient, even after drainage has been established.

Further Examinations and Experiences in Regard to the Relations Between the Vestibular Apparatus and the Central Nervous System.

BÁRÁNY. *Wiener medicinische Wochenschrift, Nos. 49 and 50, 1912.*

As the result of his investigations, comprising twenty-two autopsies, as well as five clinical cases, also acoustic tumors with extra cerebellar locations, the author comes to the following conclusions: Tumors, in any location, can produce cerebellar symptoms, both on the same side and on the opposite side.

In order to distinguish "Herd" symptoms from surrounding conditions, it is necessary to make an exact examination of the spontaneous developments as well as through functional tests; for example, when spontaneous falling occurs, it does not necessarily mean that this points to a "Herd" symptom. It is important to examine a case not once but many times. If the symptoms change, so that at times there is no falling, and no movement of the arm from one side to the other, a remote influence is fairly certain. If only a portion of the symptoms change, then there is probably a combination of "Herd" and surrounding disturbance. A passing nystagmus of varying intensity, or a permanent uniform severe nystagmus of intra cranial character, is present in tumors of every localization. Severe disturbances of hearing, in cases of tumors outside of the posterior cranial fossa, occur rarely. Slight disturbances of hearing, similar to a lesion of the internal ear, are much more common. A one-sided or double total deafness occurs perhaps only with acousticus tumors.

Ruttin has reported a case of deafness on one side with a tumor of the temporal lobe. Frey, Claus and Barany, have reported cases in which the hearing was not disturbed in acousticus tumors.

Tinnitus is not complained of much in cases of brain tumor. Severe attacks of vertigo are usually present in the beginning of tumors of any localization, later in the course of the disease, spontaneous vertigo is usually absent. The author has rarely found the caloric reaction absent, except in cases of acousticus tumors. Most of the cases of brain tumor, in which a considerable pressure on the posterior cranial fossa exists, are almost entirely insensitive to vestibular irritation. Spontaneous vomiting occurs usually only in the beginning.

In most of the cases of decided pressure symptoms in the posterior cranial fossa, an increase of the vestibular reactions both nystagmus (first described by Ruttin), as well as falling movements can be determined. If pressure symptoms are absent, the irritability of the entire vestibular apparatus may be very slight. Even in tumors of the posterior cranial fossa this may be so. An increase of vestibular irritability is not important in diagnosing the seat of the tumor. No conclusions can be drawn from a single symptom. The entire neurological picture and the course of the disease, must be taken into account in making a diagnosis.

In conclusion, the author states, that it is important for neurologists to make use of the newer methods of examination.

PEDIATRICS

Edited by Henry L. K. Shaw, M. D.

Alimentary Anaphylaxis to Eggs. (Anaphylaxie Alimentaire Aux Oeufs.)
ED. LESNE and CHAS. RICHET. *Archives Medicine des Enfants, February,*
1913.

Alimentary anaphylaxis, of which an anaphylaxis to eggs is one of the most frequent examples, is an affection which has been distinguished

for a long time among the group of intestinal intoxications. Richet was the first to show that certain alimentary intoxications were really due to anaphylaxis. This view has been borne out in clinical and experimental studies by a number of men in the last four years.

We know that this anaphylaxis to eggs can be present at any time and cases in men of sixty years or over have been reported. The most frequent time is in early childhood when it is not at all uncommon. Rosenu has shown that the anaphylactic substance in the albumin of the egg is destructible by heat and that the white of the egg is much more liable to produce these symptoms than the yolk. A very small amount of the white of the egg in susceptible persons will produce anaphylaxis. This has been done experimentally many times but no one has yet been able to produce anaphylaxis experimentally from the yolk of the egg. Some children are anaphylactic at the same time both to egg and milk but are able to digest carnivorous food and chicken. There appears to be a family pre-disposition to this condition and several observers reported cases in which the mother and the children both have absolute intolerance towards eggs. In some children the symptoms develop immediately on the ingestion of even minute quantities of the white of eggs but in other children it can be taken for several days or even months without any inconvenience when suddenly a small amount of egg will start the signs of anaphylaxis.

The mild symptoms of anaphylaxis are both cutaneous and digestive. The cutaneous forms are urticaria, prurigo, eczema or edema which appears suddenly and immediately after taking a minute quantity of egg. The facial edema, limited perhaps to one side of the face, is quite a frequent form. An involvement of both eyes or around the lips are the most frequent locations. This goes on very rapidly without any albumin in the urine and without any cardiac disturbances. The gastrointestinal symptoms are sudden vomiting, abdominal pain, and finally a diarrheal crisis. A very severe type of anaphylaxis which the authors call *la grande anaphylaxie* is more uncommon but may be so severe as to be fatal. This condition is one of shock with uncontrolled vomiting, abdominal pain, subnormal temperature, occasional convulsions, asthmatoform dyspnoea, and an intense urticarial eruption. A simpler form of anaphylaxis generally lasts a few hours but may last two or three days. In the mild form the prognosis is benign and Richet showed that the ingestion of a large quantity of egg was necessary to prepare for this anaphylactic state. Richet in his experimental studies showed that from a number of animals fed on the same amount of albumin only a few became anaphylactic and these animals were those which could not digest the albumin and had intestinal symptoms. The injection of the albumin in the stomach and the intestine of a dog did not produce anaphylaxis but he obtained the anaphylactic reaction when injected in the large intestine. Injecting it in the portal vein did not produce any symptoms.

The authors think that it is the resorption in the blood of the heterogeneous albumin which produces the symptoms of anaphylaxis.

In the treatment the question of preventive is of the most importance. In children who have this idiosyncrasy, eggs and milk should be prohibited and the authors believe that no child should take more than one egg a day until they are five years of age and during the convalescence from the course of any gastrointestinal trouble, no egg of any kind should be prescribed.

The treatment during the attack is to get rid of the albumin as soon as possible. Experiments by some authors in trying to sensitize the system to small quantities of albumin have met with some success. Schoffield gave 1/10000 of a grain of albumin for several weeks and gradually overcame the intolerance to eggs.

Vulvovaginitis in Children.

EDITH ROGERS SPAULDING. *American Journal of Diseases of Children,* March, 1913.

The author reports on a number of cases of vaginitis treated at a special clinic at the Children's Hospital in Boston. She shows how unsettled the classification and etiology of vulvovaginitis are by citing the results of numerous investigations. It is generally agreed that there are specific and non-specific types but there is a distinct tendency to diminish the former and increase the prevalence of the latter type. The inability to discover the specific organism in some cases that were clearly communicable has led to the conclusion that there might be other causes than the Neisser organism. Careful observation of cases of this class associated with infectious diseases, especially after long periods, with repeated examinations has proved many to be really due to the gonococcus. Support is given also to theory of recurrence as against repeated infections, (1) by repeated attacks in the great majority of the dispensary cases located at the clinic, (2) positive smears are found, in some cases, months after discharge has ceased and after negative smears have been found, (3) the persistence of positive smears for months after discharge has ceased, especially in untreated cases, and (4) the return of discharge in one sister in families when no other members became infected.

The average duration of the first attacks including the untreated ones was ten weeks. The average number of times of recurrence was twice but went as high as eight times in some cases. To pronounce a case cured after a few negative smears is shown to be an uncertain procedure in view of the fact that the Children's Hospital Clinic had recurrences after a year. The average total duration in twenty-six cases which were traced was twenty months.

Among the complications, proctitis is considered to be very important in view of the fact that the author believes the gonococcus may remain in the mucous membrane for months or years. As to serious sequelae in later life there is as yet no positive evidence.

The treatment is prefaced with the statement, "We have tried many different combinations and methods in the treatment, but no specific has been found." It consisted of local and vaccine treatment. Three times a day after warm boric acid irrigation. Argyrol 25% or a 1:1000 solution of some other silver salt was syringed into the vagina. Gonococcic vaccine was administered once or twice a week beginning with fifty millions and increasing twenty-five millions per week up to four hundred millions. A great drawback is the difficulty in having home treatment carried out, but good results were obtained in the few cases where the intelligence of the mother aided thorough treatment. A general tonic such as Eisenzucker is now given. Instillations of lactic acid bacilli grown in milk or suspended in bouillon and in sodium chlorid solution previously tried gave much less favorable results. Packing the vagina with argyrol tampons were no better than syringing.

The vaccine treatment was tried in varying dosage but seemed to give better results as the dose was increased as stated above. Vaccine alone is not satisfactory. Carried out with the other treatment it seems to cause a steadier improvement but cannot with certainty be said to shorten the course of the disease in the average case.

A quotation from Dr. Holt shows the importance of preventive measures in hospitals.

By adopting a routine of examinations and rules to guard against hospital contagions, the Babies' Hospital has rid itself of the disease.

In summing up the author considers the following points important.

1. We believe that all cases of vaginitis with a persistent discharge, which at any time has been profuse are due primarily to the gonococcus.
2. That the disease may extend over many years, during which time there may be many recurrences, and that the periods of latency may at least be as long as eighteen months.
3. That vulvovaginitis in children, although it may remain a local disease, is liable to any of the complications seen in adults.
4. That the most efficient treatment does not insure a permanent cure.
5. And finally, that physicians should realize the importance and prevalence of the disease and institute stricter preventive measures, both in hospitals and in private practice.

Treatment of Acute Abdominal Cases in Children.

P. LOCKHART MUMMERY. *British Journal of Children's Diseases*,
February, 1913.

Abdominal cases in children differ from those of adults. Children are very sick or very well. No mental or psychic phenomena complicate the clinical picture, but on the other hand the physical signs and symptoms must speak for themselves. While a correct diagnosis is often difficult, it is also urgent, for it is not possible to temporize and await developments as we often can in adults. The common acute abdominal

conditions in children are intussusception, acute appendicitis and, less commonly, acute obstruction of some form.

(1) Intussusception is caused, the author believes, most frequently by some hard material that is difficult to digest. The ileocaecal region is the most common site. He has noted in his experience also that it occurs almost entirely in previously healthy robust children. The important symptoms to be borne in mind are the sudden seizure with pain, a small movement of the bowels containing some red jelly-like material, and the sausage-shaped tumor which may be made out often with the aid of an anaesthetic if not otherwise.

As to treatment, the author believes immediate operation the only advisable procedure. Prognosis is very favorable up to twenty-four hours after onset, but success must not be despaired of absolutely up to three or four days. Chances are small where the intussusception is not reducible and reaction must be done. The important point is to make the operation as short as possible and to handle the parts but little. The author's practice is always to give them nourishment as soon as they can swallow.

(2) Appendicitis in children displays some peculiarities. It is nearly always acute, very frequently gangrenous, the onset is very rapid. An interval operation is not to be thought of in the presence of the acute attack. The relation of rapid pulse with low temperature is in the author's opinion the most important diagnostic factor. Rectal examination may reveal much in children. A dangerous trap is the mistaking of a rather sudden abatement of symptoms for the passing of some insignificant digestive disturbance, and the failure to operate. The author warns us that not to operate in many cases would mean the death of the child because the temporary remission means the rupture of an abscess.

The author never drains unless there is an abscess and not always then. The postoperative treatment when there is general peritonitis consists in the Fowler position, fluids in quantity and small doses of brandy. Nourishment and castor oil are advised as soon as the acute symptoms have subsided. As a substitute for a laxative the author has used hypodermic injections of pituitary extract with great success. About half an ampoule every four to six hours has made the difference between life and death in some cases, he thinks. It acts by causing peristalsis and increasing the blood pressure.

(3) An exact diagnosis of acute intestinal obstruction from other causes than intussusception is often difficult. But the author points out that it is only necessary to determine whether or not to operate.

Concerning the Cause of Permanent Opening and Cicatrization of Perforations of the Tympanic Membrane in Childhood.

GOMPERZ. *Wiener medicinische Wochenschrift*, No. 3, 1913.

Perforations that will not heal are most frequent after the otitis of Scarlet fever. Hereditary taints, particularly tuberculosis, are influential in causing a predisposition to this condition.

The early treatment of a suppurative otitis, particularly a prompt incision, frequently prevents the development of larger defects.

To bring about the healing of old perforations, the writer recommends the use of trichlor-acetic acid.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Salicylate of Iron.

M. C. S. LAWRENCE. *The Practitioner*, March, 1913, p. 633.

Salicylate of iron occurs in commerce as a dark reddish-brown powder, the dose of which is three to ten grains. It is prepared by the interaction between solutions of sodium salicylate and solutions of the per-salts of iron, the perchloride being the best to use, the iron being added to the salicylate otherwise the characteristic precipitate does not form. It is sparingly soluble in water, but readily so in a solution of potassium bicarbonate, of the same strength as the solution of sodium salicylate used in its manufacture, the effervescence occurring soon passing off. For adults the dose generally contains seven and one-half grains each of sodium salicylate and potassium bicarbonate and seven and one-half minims of B.P. liquor ferri perchlor. It is pleasant of taste, non-depressant, non-constipating, is a well-marked febrifuge and diaphoretic, the feces being blackened by the iron.

Its most marked effects are in acute tonsillitis and in erysipelas, particularly in the latter disease, acting with great rapidity and invariably cutting short the disease, a cure being effected in from three to ten days. After the first few doses there is a striking alleviation of all pain and other subjective symptoms. The salicylate of iron is given every three hours, following a calomel purge. As the case improves the interval of dosage is lengthened until entirely discontinued. Hypnotics may be used if needed, local soothing applications are applied and a liquid diet is insisted on. Histories of a number of cases are given to illustrate the contentions of the author, whose theory is that the drug acts as a destroyer of bacteria in the blood, and owing to its rapidity of action does not give the blood time to form antibodies, nor assist it to do so.

While it is of great use in tonsillitis it is not invariably beneficial, from which the author deduces that in the cases where it fails, the disease has not the streptococcus as the predominant organism. He has found this preparation of no especial value in rheumatism or in sciatica.

The Emetic Action of the Digitalis Bodies.

ROBERT W. HATCHER and CARY EGGLESTON. *Journal of Pharmacology and Experimental Therapeutics*. Vol. IV, No. 2, November, 1912, p. 113.

Emesis is one of the most common symptoms of poisoning with the members of the digitalis group and while all of the digitalis bodies are

capable of causing emesis their activity in this respect shows a much more marked difference than as to their cardiac activity.

The view generally held that this emetic action occurring with the clinical use of the digitalis bodies is due wholly or chiefly to the direct irritant action on the mucous membrane of the stomach, is based upon the fact that all of the drugs of the group exert an irritant action on certain mucous membranes and upon subcutaneous tissues, and upon the results obtained by introducing into the stomach amounts much greater than those used clinically. The experiments were made upon cats, dogs, and upon rats and all of the various members of the digitalis group were used, including, convallaria, squill, ouabain, etc.

The several different drugs or what are known as their active principals were administered orally and not intravenously in order to decide if possible whether the emesis so universal in all these bodies is due to local effect on the mucosa of the digestive tract. As a control the same drugs or principles were injected intravenously and the results in each case were conclusive, indicating that the emesis is due mainly, if not exclusively, to their action on the vomiting center in the medulla.

The results seen after the oral administration of strophanthus and ouabain to man and the similarity of the behavior of the digitalis bodies in man, to that observed in the cat and dog, leave no ground for supposing that the mechanism of the emetic action in man is in any way different from that in those animals, therefore the emesis sometimes following the therapeutics application of these bodies is of central rather than local origin.

The Peripheral Action of Certain Drugs with Special Reference to the Lungs.

D. E. JACKSON. *Journal of Pharmacology and Experimental Research.* Vol IV, No. 4, March 1913, p. 291.

A new method for the study of volume changes in one lung is described by the use of a specially designed metal plate between the lung and the pericardium serves to place the lung in a freely movable cavity formed by the plate and the chest wall; also a method for maintaining the blood pressure of an animal at a constant level after its blood has been rendered incoagulable by hirudin, making it possible to study the action of various substances upon the lungs *in situ* when the confusing influences of enormous changes in blood pressure have been eliminated.

Under these conditions epinephrine produces a prompt dilatation of the bronchioles if these had been in a state of contraction when the drug was injected. Hence the broncho-dilator action of epinephrine is wholly independent of the marked rise in blood pressure which occurs when the drug is injected under ordinary conditions. Moderate quantities of atropine do not paralyze the broncho-dilator nerve endings, but large doses seem to depress the endings to an appreciable extent. Small doses of pilocarpine have varying effects according to existing conditions while

large doses cause constriction of the bronchioles in all animals. Several alkaloids including quinine (and even atropine itself after the bronchoconstrictor nerve endings have been paralyzed) cause broncho-constriction. This appears to be a direct muscular action. After a brief initial constriction nicotine causes a dilation which appears to be due to an increased secretion of epinephrine caused by the nicotine. Sodium iodide and camphoric acid do not affect the bronchial nerves while synthetic adrenalin, choline chloride and trimethylamine hydrochloride all produce active broncho-dilatation. It is very probable that in the normal state and with natural respiration the dilator response of the bronchioles to small quantities of epinephrine is very much more effective than is generally found to be the case in experimented animals.

Gall Stone Diseases. Medical Treatment.

Wm. BAIN. *The Practitioner*, March, 1913, p. 538.

After discussing at great length the causes, symptoms and diagnosis of gall-stone disease the author gives tardy attention to the subject upon which he is supposed to be writing.

In the treatment of gall-stone disease the first step is to improve the digestion, for until this is done the use of drugs is of no value, this entirely aside from the general improvement in the patient and a consequent improvement in the affected organ. The principles of treatment are to improve the digestion, to foster nutritional efficiency, to disinfect the biliary passages and to correct any injurious habits.

Where there is flatulent distension of the abdomen there should be several rectal douches at a temperature of 104°F. which besides emptying the colon stimulates the musculature of the intestines. The bowels should move daily and sulphur water, salines or even hot water before breakfast will aid in accomplishing this. The diet must be suited to the individual case, being kept within the limits of the patient's digestive powers, limiting the carbohydrates and fats, forbidding alcoholic drinks and indigestible food. Regular meals at regular hours are of greatest importance. The author believes that there may be a reflex inhibition of the pancreatic functions and therefore administers the pancreatic enzymes with nux, sodium bicarbonate and sodium sulphocarbonate.

Because of its effect on the digestion, mental tranquillity is desirable and while exercise is most needful fatigue is harmful. Olive oil helps where there is hyperchlorydia and tenderness over the gall-bladder is helped by mustard-bran packs which may be persisted in for several days. When the digestion has improved cachets containing cholin and urotropin may be administered for a continued period, sometimes several months.

SURGICAL PATHOLOGY

Edited by George E. Beilby, M. D.

Experimental Agglutinative and Hemolytic Transfusions.

REUBEN OTTENBERG, D. J. KALISKI, and S. S. FRIEDMAN. *Journal of Medical Research*, May, 1913, Vol. XXVIII, No. 1.

These authors have attempted by a series of experiments to determine what would happen when hemolytic or agglutinative blood was trans-

fused directly between two animals of identical species. Their work is as yet incomplete and does not lead to final conclusions, but still presents a number of interesting facts. They found that the smaller animals, such as rats and rabbits, in which they were able to find isoagglutinins, were not available on account of the difficulty of doing direct transfusions between them. In dogs, the ideal experimental animals, previous workers had repeatedly failed to find isoagglutinins or isohemolysins. After several failures, however, the technical difficulties, which had previously interfered with the demonstration of such antibodies, were at least partly overcome; and it was then readily demonstrated that isoagglutination and isohemolysis occasionally occur between the bloods of apparently normal dogs, and after a long series of experiments, in which the subject is approached from many angles, the authors feel justified in drawing the following conclusions.

By a suitable technic, isoagglutination and isohemolysis can be demonstrated to occur between the bloods of different dogs. Isoagglutinins occur naturally, and it is possible that the immune isoagglutinins produced by von Dungern and Hirschfeld are merely intensifications of these. No sharp grouping (such as would indicate a limited number of agglutinable substances and of agglutinins) could, however, be made out in the naturally occurring agglutinins. Natural (as distinguished from immune) isoagglutination is, however, a relatively weak phenomenon.

Isohemolysis and isoagglutination are closely connected with each other in dogs, as Moss and others have shown them to be in human blood. In our observations hemolysis never occurred without agglutination. Apparently isohemolysins may be developed *de novo* by the repeated transfusion of agglutinable cells, but they are never developed by the transfusion of non-agglutinable cells.

Hemolysis in the body is far more intense than in the test-tube. (The authors have made the same observation in an unpublished human transfusion, and similar experimental observations have been made by Muir and M'Nee.)

The direct transfusion of blood whose red cells can be agglutinated and laked by the recipient's serum is followed by destruction of the transfused blood with an intense intoxication. It is not yet clear whether agglutination plays any part in this result, or whether it is due entirely to hemolysis.

A very remarkable blood-picture, presenting many of the morphological forms peculiar to pernicious anemia, is produced when the blood of another animal of the same species is destroyed in the circulation. (Similar blood-pictures have been observed by Bunting and others to follow anemia produced by hemolytic poisons.) In the author's experiments this was not due to anemia, as the animal's own blood was not destroyed, and there was no reason to believe they were anemic. The changes must have been due to some peculiar toxic effect, on the bone-marrow, of hemolytic blood destruction.

ALBANY MEDICAL ANNALS

Original Communications

TECHNIQUE OF THE DELIVERY ROOM. DELIVERY OF THE PATIENT. ABNORMAL PRESENTATIONS AND COMPLICATIONS, AND THEIR TREATMENT.

Read before Medical Society of the County of Rensselaer, March 11, 1913.

BY THOMAS S. A. O'CONNOR, M. D.

The part assigned to me in this symposium presupposes that the expectant mother has been carefully studied during pregnancy and that a definite plan for the conduct of her labor has been prearranged. The problem of an obstructed labor from any mechanical obstacle, from faulty position and presentation, the condition of the soft parts, and finally the patient's equipment for labor learned from the studies of her metabolism, of her muscular energy and of her nerve reserve force, all predict to the experienced obstetrician greater or less difficulty as the case may be. Generally speaking, the conduct of labor, with the mother's best interests in view, will be also for the child's best interest, but as we shall see later, accidents and unforeseen complications may occur, in which these interests are placed in the balance. When this does occur, there are many factors to influence the results.

The preliminary preparation of the patient I will skip over with a few words. The parts should be shaved or if not the hair should be clipped and a good thorough scrubbing should be given to the external genitals. The patient should be given a rectal injection so that the lower bowel is empty. This enema, however should not be given if the first stage has been completed as then the return may come during the delivery and thus muss up the field of operation. The patient should be carefully

examined both vaginally and abdominally so that at the beginning of labor we may be able to know just how things are and then we can outline our method of procedure. I would feel as if I had been remiss in my duty here this evening, if I did not speak of a much neglected part of obstetrics, viz.: "The significance of posture in obstetrics." It is a fact that we obstetricians during the past few centuries of modern obstetrics, in our humane efforts to assist the parturient woman have unconsciously, in many instances done harm by our interference, and in such a manner that we have actually created, artificially, conditions that render treatment necessary, and which conditions, without our interference, would not have occurred.

To illustrate my meaning in the simplest possible way, we find it necessary to ligate the umbilical cord to prevent its bleeding. But this necessity was produced, solely and entirely, by our cutting the cord with a sharp instrument. Without this sharp incision, ligation would be no more necessary than it was during the thousands of years before scissors and the ligature had been invented. In prehistoric times, the cord was severed by laceration, as it is in animals, or by friction with shells, stones or by the teeth perhaps.

To illustrate again, we find it necessary or desirable, after a child is born, to press upon or manipulate the uterus in a particular way, to promote its contraction, to expedite delivery of the placenta, and prevent hemorrhage. But to observe again, we have created this necessity artificially, by keeping the woman upon her back and taking away the child and consigning it to the nurse. Had the conventions of civilization and of modern obstetrics not interfered, the natural mother would have cared for her child in the natural way. See then what would happen: the mother if recumbent, would rise to a sitting, kneeling, standing posture she would lean forward and take the child in her arms and with natural affection hold it to her bosom. The unbroken cord would be long enough, counting the length of the infant's body from the navel to the mouth, to allow the child to suckle at the nipple, which it would immediately proceed to do, thus producing reflex uterine contractions, which would be farther strengthened by the pressure of the child's weight and the perpetual motion of its feet, upon the fundus uteri. The

uterus would also receive additional pressure upon the fundus, from the weight of the abdominal organs pushed down upon it, by the woman leaning forward and thus lessening the space between her diaphragm and pelvis. In prehistoric times this was the method—the natural method—by which uterine contraction, placental expulsion, and the prevention of hemorrhage was secured.

I do not desire to dispute the utility, advisability, and necessity even, of our modern methods of manipulating the uterus for the purposes mentioned, but I beg to insist that this necessity has arisen artificially by our own interference, in obedience to the conventions of custom: by our keeping the woman on her back, and consigning the care of her new-born child to another individual of the same species.

To illustrate again: we often find it necessary after labor to empty the bladder by catheter. The woman cannot pass her water. We say the urethra has been subject to pressure or is swollen, or bruised, etc., during delivery.

In many—very many instances—this retention of urine has been produced by ourselves, simply by keeping the woman upon her back in bed. If we let her sit upon a chamber vessel—the natural posture for urination—she will, in a great majority of such cases, pass her water, and the necessity for a catheter will be obviated.

My chief contention is that the recumbent posture during labor is much overdone; that it is often persisted in—either by custom or by the direct order of the obstetrician—when it does positive harm, by prolonging labor, by exhausting the woman; and sometimes leading to a persistence of faulty presentations, as well as increasing the duration and intensity of the woman's suffering.

Let it be especially noted that by persistently maintaining the recumbent posture, we deprive the woman of one of the chief factors of power by which, in the natural order of things, her child is forcibly extended. I mean the factor of thigh pressure upon the walls of the abdomen and uterus, which comes into play when she assumes a sitting, kneeling or squatting posture, but of which she is completely bereft in the dorsal decubitus.

Obstetric science of to-day teaches that the forces of labor

consist of, first, uterine contractions, and second, contractions of the abdominal muscles and diaphragm in the act of straining or bearing down. Nowhere do we find any recognition of, or reference to, the pressure of the thighs upon the abdomen as an additional factor of power, when the woman assumes a sitting, kneeling or squatting posture. I plead for due recognition of this additional source of power.

Let it first be noted that of all the different postures during labor recorded among primitive peoples, nowhere do we find reference to the dorsal decubitus. Our maternal ancestors, in prehistoric times—women of the forests and the fields, educated in the school of nature, so to speak, adopted for the most part a squatting posture, in fact, the posture of defecation. The woman, to steady herself during labor, grasped with her hands a sapling in the woods. If no suitable young tree was available, a stake was firmly driven in the ground for the same purpose. In our parturient women of to-day, there still survives the inherited desire to grasp something in front of them during the labor pains; and thus we furnish them with the very poor substitute of a sheet fastened to the bed post which they can grasp and pull.

If any one of you will place his closed fist in the neighborhood of Poupart's ligament and then assume a squatting posture, you will easily demonstrate how forcibly the fist will be compressed against the abdomen by pressure of the thigh column. And it is inevitable that this thigh pressure would be still much greater upon the distended abdomen of a pregnant woman. Thus the intra-abdominal pressure is increased; the contracting walls of the uterus and abdomen are re-inforced.

And now we come to the extremely interesting point that this provision of thigh pressure is not only a factor of power, but is also the natural means by which transverse presentations are either altogether prevented or, when they occur, are corrected.

To understand the modus operandi of thigh pressure in thus turning a child, it is necessary to realize that the act of squatting, as usually practiced is not a symmetrical proceeding. Both thighs do not press equally upon the abdomen, nor is the direction of pressure the same on both sides of the abdominal surface. Usually, in squatting, one foot is placed flat on the ground and

in advance of the other, while this other foot, considerably posterior to the first, rests its toes only on the ground. The thigh of the forward foot will assume more or less of an acute angle with the woman's spinal column and will come in contact with the abdomen over a large surface extending from the groin to a line considerably above the umbilicus; while the thigh of the posterior foot will be almost horizontal, and will have much limited surface of contact on the lower lateral portion of the abdomen only.

Now in shoulder and arm presentations we know the child's head usually rests low down, upon one of the iliac fossae, while the back extends obliquely upwards on the other side, to terminate in the breech end of the fetal ovoid situated near the fundus uteri at a considerable distance above the crest of the ilium. Now if we take care that the woman in squatting should always place the foot forward which agrees with the side of the abdomen towards which the child's breech is directed, it is evident the pressure of the thigh will come into forcible contact with the back of the child and lift it and the breech end toward the median line and ensiform cartilage; while the other thigh will press on the abdomen low down, over a smaller surface, and coming in contact with the projecting head of the child, will lever it off of the iliac fossa, inward toward the median line, and thus into the pelvic brim; and so a head presentation is produced.

In practising this proceeding, don't forget the rule of placing that foot forward corresponding to the side towards which the breech end of the child is directed.

It is important that the woman remain in this selected posture long enough to have a few labor pains; these pains themselves contribute to straighten the uterus and lift the breech toward the median line to a certain extent, and when aided by forcible mechanical leverage of thigh pressure properly applied, there are but few, if any, cases of transverse presentation that would not be verified by this spontaneous version process.

The following case has been reported: a woman in labor twenty-eight hours, ergot had been given by the midwife, the waters of course had been discharged, and the uterus had been tetanically contracted round its contents, yet by placing the woman in the kneeling posture with her head and body bent as

far forward as possible, the arm began to recede in five minutes, and in twenty minutes the child was delivered, head first, and mother and infant both survived and did well. In all probability, the mechanism of the case was as follows: the two thigh columns acted against the column of the lumbar spine—the three columns like the legs of an inverted tripod, converging below, diverging above, caused the child to escape in the direction of least resistance, namely, upwards, thus it was lifted out of its impaction in the pelvis, the arm was withdrawn and a head presentation produced. This case was reported by Dr. E. E. Barnum in the *Buffalo Medical Journal*, Feb., 1892, pp. 385-389. I mention it to show that even in the worst cases, and under the worst conceivable conditions, the factor of thigh pressure may still be effective in relieving the condition by causing a change of presentation. The late Robert A. Murray mentioned two cases of transverse presentation in which he was about to perform version in the usual way, but in both cases the woman had occasion to get on a commode in a sitting posture before the operation—with the result that both were changed to head presentations and delivery occurred in one immediately, in the other in fifteen minutes, without any operative procedure whatever.

I had a similar experience as related above in my own practice. I was called to see a woman in labor about five years ago. When I arrived there and had made an examination, I found the woman about seven months' pregnant with an arm presenting. There were two women there who were intoxicated and I felt that the surroundings did not warrant carrying on any obstetric operation of any severity. I tried to turn the child without giving the woman an anesthetic but was not successful. I then told the people that it was absolutely necessary to have the woman brought to the hospital. I went out to telephone the hospital and had made all the necessary arrangements for her removal and was on my way back to the house when I was met by a woman who told me that the child was born. While I was out the woman got up to use the vessel and in so doing she had performed the version that I was unable to do myself. The baby was lying in the bed when I returned. It is needless to say that I was much chagrined at the time.

Before dismissing this part of the subject, I beg that you will remember that it is not only as a corrector of cross presentation that I advocate thigh pressure; but I insist that this pressure is one of the normal factors of power in perfectly normal labors; a power of which we have no right to deprive the woman by keeping her in the recumbent posture, or by supinely allowing her to remain recumbent.

In discussing the subject in Washington a few years ago, Dr. Joseph Taber Johnson related a case of natural labor in which progress was so slow that the woman got up and kneeled by her bedside to pray for assistance; but the kneeling posture produced an immediate delivery, before her prayer could be uttered.

Finally, an occipito-posterior may be rotated by the kneeling posture. When a woman kneels and leans back upon her folded limbs, so that the pelvis comes in contact with her heels, the length of the lower extremity, in normal women, is such as to bring the protuberance of the heel in contact with the skin at a point exactly over the great sacro-sciatic foramen. If the occiput were towards the left acetabulum, the forehead would be towards the opposite sacro-iliac synchondrosis, one of its frontal eminences in contact with the sacro-sciatic foramen; hence the pressure of the heel at this point will push the forehead into the hollow of the sacrum and cause the occiput at the opposite acetabulum to go to the symphysis pubis.

With regard to this matter, then, may we not reach the following practical conclusion, *viz.*, before applying to an unrotated head (I mean at the lower strait, of course) and before attempting to produce rotation by any of the methods commonly practiced, let the woman kneel in the method suggested, and thus test the power of heel pressure in producing the desired rotation.

I hope that you will pardon me for taking up so much of your time in describing the necessity of posture in obstetrics, but, I feel that it is much neglected and for that reason I have gone into the matter in much detail. I will now let this subject rest and turn to the management of the first stage. If a primipara, it is a good plan to explain the course of labor to her, assuring her that she may suffer much pain, but in the end

will be made a joyous mother. In making vaginal examinations care should be taken that the membranes are not ruptured. In a primipara as a rule, the membranes should not be ruptured until the cervix is fully dilated. Sometimes, however, in a case of liquor hydramnios, the labor may be helped by the early rupture of the membranes as the head cannot engage on account of the excessive amount of water preceding it. In case the head is engaged, the membranes may be ruptured during the pains. In case the head is not engaged as in case of hydramnios, the membranes must never be ruptured during the pains as then we may get a prolapsus funis, or prolapse of a hand or an arm. When rupturing the membranes in case of hydramnios, pressure should at the same time be exerted at the other end of the fetal ovoid so as to cram the head into the superior strait and thus act as a block against any of the dependent parts becoming prolapsed with the oncoming rush of water.

It will be found very useful in a multipara with a flaccid abdomen to apply a very tight abdominal binder as this helps to keep the line of direction of force properly applied.

In case of central placenta previa, if discovered early, I would recommend Cesarian section. If of the other varieties, and found early and if bleeding is present, we should put a good tight packing in the vagina and apply a snug abdominal binder in order that we may prevent the uterus ballooning from an internal hemorrhage; and if this controls the bleeding, we may stand by and wait as for a normal labor. Sometimes in case of placenta previa, we may control the bleeding by keeping pressure above on the abdomen and thus hold the presenting part so that it acts as an effectual plug. If the cervix is fully dilated and the bleeding is severe, we may apply the forceps or do a combined version.

If a convulsion should supervene after dilatation has begun, we should force dilatation manually and apply forceps; or if the head is not engaged, we may elect to do a version.

The second stage having begun, the case being a normal one, we will now proceed. Suffice to say that the technique should be the same as for a major abdominal operation. The field of operation should be carefully prepared and the obstetrician who fails to wear rubber gloves to confine a woman is

certainly derelict in his duty. A douche bag should be filled with boiling water so that as we shall see later on if it is needed in case of hemorrhage, there will be no delay. In a small bowl or basin we may place our sterile cord tape, two or three artery forceps and our umbilical scissors. Some wipes for the baby's mouth and eyes should also be got in readiness.

If the woman be a multipara, especially one with a history of precipitate labors, she should be kept in the bed, but not necessarily on her back.

If a primipara, we need not be so cautious. When it is no longer safe to allow the woman to be up and about, during the pains proceed to aid stretching of the perineum by placing the index and middle finger outstretched in the vagina, bearing down slightly with them and thus stretching the perineum in advance of the presenting part. When the occiput begins to stretch the perineum, always watch closely so that the head will not descend too rapidly and thus do damage. Just a word here to the choice of an anesthetic. I always use ether. The more I see of chloroform and the more I hear of it, the more I fear it.

When the occiput is well down and coming through the vulva, use ether to an obstetric degree, placing the woman on her left side, having a nurse hold the right knee elevated so that you can hold your left hand on the occiput and with your right hand between the tip of the coccyx and the anal opening, locate the forehead. Thus you have the head completely in your control. A pain comes; allow the head to descend slowly until the rim of the perineum begins to blanche. At this point always force the head back again as a blanched or bloodless perineum will tear very easily. With the next pain, the head is allowed to come down a little further and thus the perineum is slowly stretched. Sometimes with a rigid perineum, it is a good plan to here do an episiotomy. The ether is now pushed a little more and then while the patient has a complete absence of pains, the head can be slowly delivered. The woman is now placed on her back, clean out the child's mouth and feel to see if the cord is around the neck. If it is, try to slip the loose end over the child's head and if there is no pause in the labor and thus no time for this, try to slip it over the shoulder, holding the child as close as possible to the body of the mother, following as near as you can,

a continuation of the curve of the pelvis taken by the child in its descent. If, however, the labor is well under control, and it is impossible to loosen the cord, put two clamps thereon and cut between. If the child is breathing there need be no hurry about the rest of the delivery. Granting that the cord is not around the neck, you may here pause in the delivery. The uterus has made a supreme effort to deliver the head and needs a rest. As soon as the head is born, stop the anesthetic and then the woman will quickly have a return of the pains and with both hands well around the child's head, you may now exert traction slightly downward in order to get the anterior shoulder just outside the symphysis pubis and then using this as a fulcrum, the posterior shoulder may be delivered. The rest of the body will usually follow and care should be taken to keep the body during the delivery in the curve made in its descent through the pelvis.

The child is now placed on its right side, unless artificial respiration is necessary, in order to favor the closure of the foramen ovale. The child's mouth is kept free of mucus and sufficient stimulation of breathing may be made by just simply blowing sharply on the child's skin occasionally. A lot of the vigorous slapping given to the new-born is, in a good many instances, wholly unnecessary as for the first few minutes after birth, the child does not respire very frequently. At this time, a drop of nitrate of silver may be placed in each eye. On cessation of pulsation in the cord, it may be cut and tied and the child may be suspended by its feet in order to facilitate the drainage of mucus from the air passages or this may be done before the cord is cut. A few gentle slaps may now be given to the child on the buttocks. Quite often the child is slapped by some in the lumbar region. This is to be deplored as it may be the cause of displacing a kidney. The child should not be turned over to the nurse until we see that it is enjoying a full free natural expansion of the chest.

I will purposely omit speaking of the other numerous methods of resuscitation. As soon as the child is born, someone should hold the hand just over the fundus, not necessarily massaging it, but doing so if it has a tendency to balloon. The practice of many of our nurses to continually keep massaging the fundus

when the uterus is doing its work properly is all wrong. I will speak of this more fully under hemorrhage.

The child now being cared for, we must examine to see if there has been any lacerations. If the cervix has been lacerated, and the bleeding therefrom is not of any moment, it might be well to leave things as they are; but if the laceration is a severe one and the hemorrhage is profuse, we must repair it immediately. It is a good plan to express the placenta before inserting the sutures. The operation is of no small moment, so everything should be arranged for obtaining the best results, not only as regards repair, but also the preservation of asepsis. The latter may appear difficult, but if one goes to an obstetrical case properly prepared it is not so hard to accomplish.

First of all, one cannot work to the best advantage in a low bed. The patient should be placed on a kitchen or dining-room table, in the lithotomy position with the buttocks well down to the edge. To bring the cervix into view, the first two fingers of the left hand may be placed in the vagina. Grasp the anterior and posterior lips of the cervix with a sponge forceps, as they hold the boggy lips well and are less liable to tear out than double hooks or velsellum forceps. When the cervical tear is brought into view, it is most important to expose the upper angle of the laceration. This is where the hemorrhage generally comes from, and where the first stitch must be placed. The most satisfactory suture here is chromic cat-gut. As a rule not more than two or three sutures are required, and the less the number of sutures, the better the result. One should be careful in placing the sutures so as not to encroach too much on the cervical canal, in order that good drainage be provided for.

If we have a tear of the perineum, whether the bleeding therefrom is profuse or not, it should always be repaired. If the tear be a first degree tear, of course that may be disregarded. Second and third degree tears should be sutured at once, unless in cases where the woman is extremely weak. If a second degree tear, and if it extends externally, chromic or plain cat-gut may be used for the internal sutures, care being taken to get the torn edges of the levator ani muscle together, and silk worm gut may be used for the external suturing. If we have a third degree tear, we have a more difficult problem to solve. In my own

practice, I have had two such cases and they were both in face presentations. On my first case, I brought the parts together very nicely as I thought, but I failed to sew up the torn bowel as I began by suturing the divided ends of the sphincter and then proceeded as for a second degree tear. I very naturally had a very poor result as the woman developed a recto-vaginal fistula and the fecal material infected the whole field with a subsequent breaking down of the perineum. This woman subsequently had a secondary perineorraphy with a very good result.

My second case was one that I saw in consultation with Dr. McGrane. We are compelled to deliver it in the face presentation. This case had the benefit of my former inefficient work. I sutured the wall of the rectum together and then proceeded as in the other case. I had the opportunity to examine this case two years later and was pleased to learn that she had perfect control of her bowels and was not bothered in any way incident to the operation. In doing perineal work, always strive to repair as soon as possible after the child is born, as then the parts are practically without sensation.

With the successful termination of the second stage, a large number of physicians seem to think that their work is practically concluded and apparently they do not give to the remaining portion of the case that careful attention which it deserves. When we consider that the third stage is the stage in which we have adherent placentae and membranes, when while waiting for its conclusion we discover lacerations of the cervix and perineum, and when after a normal delivery, the patient develops sudden shock and examination reveals a uterus which, since it has not been carefully watched and controlled, suddenly becomes enlarged and is found to be full of blood with the patient exsanguinated, when again fortunately rarely, still the accident does occur, we may discover that the uterus is ruptured and the hemorrhage, while not appearing at the vulva, has taken place to an enormous extent into the abdominal cavity, then we must realize the importance of proper care at this time.

After the birth of the child, with the ligating of the cord, etc., the physician should keep the uterus under his hand until the conclusion of the labor. Just at this time the most common mistake begins, and that is the kneading or massaging of the

fundus. The normal uterus immediately contracts as soon as the fetus escapes, and the reason for "holding" it is merely that we may keep ourselves informed as to the condition of that organ. Occasionally a little gentle stimulation with the finger tips is permissible, but violent squeezing and continuous rubbing produces no valuable results at all. We should remember that at this time there are distinctive periods of contraction and softening which are physiological and a uterus which is alternately soft and hard is behaving in a perfectly normal manner. As these contractions continue, the contractions grow longer and the softening shorter, until finally there will be a sharp decrease in the size of the body of the uterus showing that the placenta has separated from the uterine wall, the organ thereafter, at any rate to all intents and purposes, remaining hard and firm. The placenta and membranes being no longer of any use may now be expelled by the Crede method. The Crede method was never intended to separate the placenta from the uterine wall but merely to expel it after such separation had taken place, and if success is to be assured certain rules as laid down by Crede must be followed. These being first—to wait until separation has taken place; next, before attempting expulsion, to be sure that the uterus is hard and firm; third—grasping the contracted uterus with the operator's thumb on the anterior wall, and the four fingers of the same hand on the posterior wall while the organ is slightly retroverted bringing the uterine canal in the axis of the vagina, and the uterus is then gently squeezed. The operator's other hand is held in front of the vulva. Contrary to the usually advised custom, the placenta is not turned over so as to twist the membranes into a rope, but the hand is simply held still and the other hand is removed from the abdominal wall. After a short period without the stimulation caused by the hand, the uterus relaxes a little, as also does the cervix, and the membranes generally slide out of the os on their own accord.

The question is often asked, "When would you deliver the placenta?" and the answer usually is, From twenty minutes to one-half an hour after the birth of the child. This time limit in obstetrics should be condemned. Some cases may require a forcible delivery in five minutes, while others may go on perfectly well for two or three hours depending on the condition of

the mother. When the uterus remains firmly contracted, when the placenta and membranes are separated and are no longer of any use in keeping closed the uterine sinuses, then and only then is it proper to remove them, irrespective of the hands of the clock.

With the conclusion of the labor which, as its name denotes, has been attended by the hardest kind of physical work, the patient is tired and should have absolute rest. All persons should be excluded from the room, including the baby, the shades drawn, fresh air admitted, and the woman given an opportunity to sleep as long as she desires.

We now turn to one of the most dreaded and most dangerous complications of labor, viz.: hemorrhage. In taking up this subject, I feel that I should first of all speak of the most frequent cause, *i. e.*, interference with nature, more especially during the third stage. In the proper execution of a delivery, we have little to fear of being compelled to treat a post-partum hemorrhage and it is my most firm belief that most hemorrhages of this variety arise from haste, neglect, ignorance or laziness on the part of the obstetrician. Of course, there are exceptions. It is a crying shame to see the way some so-called accoucheurs will handle a case. They never make an ante-partum examination of their patients; they do not know the position of the presenting part; but simply know that the head presents and then sit around and wait for something to turn up. As a rule, if the third stage of labor is properly conducted, there will be but a small amount of bleeding.

Bleeding may arise from the placental site, cervix, vagina or perineum. If the uterus is firm and the bleeding is profuse, it is usually from a tear along the birth canal, this tear as spoken of before should be sutured. Bleeding may be due sometimes to a rupture of the uterus. In this case an immediate hysterectomy should be performed.

If all the precautions already alluded to have been taken and the bleeding still persists, we, no doubt, have an atony of the uterus or a hemophilia; if from a hemophilia, we must pack; and if from an atony of the uterus, a vigorous massage of the fundus and the breasts is indicated and other methods which I will now try to enumerate briefly.

- (1) Pressure on the abdominal aorta.
- (2) Compression of the uterus in anteflexion.
- (3) A small wicker of gauze surrounding the cervix may sometimes stimulate the uterus to contract.

(4) The introduction of the whole hand into the uterus and pressure on the fundus through the abdomen with the other hand. Incidentally I might state here that if this procedure is done, care should be taken to withdraw the hand during contraction of the uterus on account of the likelihood of air entering the uterine sinuses and causing a fatal pulmonary embolism.

(5) The use of the intra-uterine douche of sterile water heated to 120 degrees. We should always be sure that the water is hot enough. If the solution is any cooler, the hemorrhage is provoked instead of lessened.

(6) The douche failing us, we must now resort to the intra-uterine pack. The pack should be carefully and thoroughly inserted as an incomplete pack is worse than none at all. If eventually, we have checked the hemorrhage, we must now resort to energetic measures to treat the profound shock. These measures I need not mention here, save the one that is so often overlooked and that is an intravenous injection of a saline solution.

I will speak but briefly of the use of drugs during labor. Sometimes, in the primipara especially, who has nagging pains with little or no progress, it is a good plan to give a hypo. of morphia in order to allay her restlessness and nervous irritability and cause a cessation of the pains for a few hours. On return of the pains, they will no doubt be much stronger and more effective. In case we need stimulation for the pains, we may use strong black coffee, strychnine, quinine, etc.

I speak of the practice of using hyoscynamin-morphin-cactin for the "twilight sleep" only to condemn it.

Sometimes when the pains appear to be lessening and everything appears to be at a standstill, a few whiffs of ether for five or ten minutes may give the patient a rest which she needs. With reference to ergot, it should never be given before the delivery of the placenta with one exception and that is in premature detachment of the placenta. In administering ergot if necessary, we should never be afraid to give as much as two drams at a dose. Quite often, in a case of hemorrhage, wishing to

get a prompt contraction of the uterus, it is surely a false security that we obtain by giving it by mouth. The woman has lost an enormous amount of blood, her vital forces are away below par and does it not stand to reason that the ergot will lie in her stomach, if she lives long enough, for hours before it is absorbed? We should resort to the hypodermic and give some styptic as styp-ticin, ergotole, sterile ergot, etc., deep into the muscles of the buttocks. In an urgent case, I have used plain ergot hypodermatically as I feel that we must always act to meet the emergency.

A comparatively new preparation has been put on the market recently for use in obstetrics and that is pituitary extract. It has been used quite extensively in Germany and it is from there that we are getting most of our reports. It is considered most valuable to be used nearing the completion of the second stage. In the first stage with nagging pains, quieting efforts and time are far better than pituitrin; but when the cervix has shortened and dilated to three fingers or over and advance with engagement does not occur from simple ineffectiveness of the labor pains here is one of the time when the effect of this drug is most striking and satisfactory. Within five minutes of the time of the first or second injection the character of the pains is entirely changed. They become much stronger, of longer duration, and nearer together and continue for a varying time of about two hours.

In the second stage of labor when a little more vis a tergo is needed to mold the head through the pelvis or the uterus is tiring from its efforts against a slight degree of disproportion, the results are equally satisfactory to those noted above. Here it may be combined with one twentieth of strychnine. The effect has been more marked in multiparae than in primiparae.

In the third stage when no inertia is present, pituitrin causes an earlier separation of the placenta but in this particular condition it might be well to leave things alone and let the labor progress normally. When inertia uteri is present and profuse bleeding occurs, pituitrin is illogical alone. It causes intermittent contractions of the uterus. A more tonic pressor is needed such as ergot. However, pituitrin supplies something which ergot does not in stimulating prompt contraction, in most positively and strikingly preventing the shock accompanying post

partum hemorrhage and in aiding the involution of such an atonic uterus. Where pituitrin has been employed earlier in labor with inertia, it is to be remembered that its effect is temporary and unless it is repeated in the third stage grave hemorrhage may occur. This drug is usually used in doses of one C.C. and may be repeated if necessary.

Abnormal Presentations and Complications.—The first one that I will take up is an excessive flexion of the head. Treatment may be demanded at the inlet especially if the fetus is dead, to assist in the engagement of the head, since the tonicity of the neck has been lost in macerated fetuses. After engagement no treatment is necessary.

Bregma Presentation or Incomplete Flexion.—A partial extension of the head whereby the large fontanelle is brought upon the same plane as the small.

Treatment: Immediate correction of the incomplete flexion should be made, (1) by pushing the forehead up during uterine contraction with two fingers in the vagina, at the same time making pressure on the fundus; or (2) the whole hand may be introduced in the vagina and either the occiput drawn down or the forehead pushed up, counterpressure at the same time being made upon the podalic extremity of the fetus through the fundus, or upon the occiput through the lower uterine segment.

Brow Presentation.—A partial extension of the head whereby the brow instead of the head becomes the presenting part.

Treatment: One must never trust to spontaneous rectification; manual correction of the faulty attitude into a vertex presentation, or even into a breech by podalic version, gives better results than waiting for spontaneous delivery with the brow presenting. Manual conversion of the brow into a vertex by combined methods is the best treatment. Digital pressure upward on the brow; lifting up the brow with the whole hand should be tried. The forceps should never be used in a true brow presentation until a partial rectification of the faulty attitude has been made, for the unusually large circumference of the presenting part results disastrously for the fetus and the mother. The membranes being intact, a version should be performed. Where the fetus is known to be dead, perforation of the head may be done.

Face Presentation may be defined as a cephalic presentation in which the head is in extreme extension, with the occiput in contact with the neck.

Treatment: In this presentation more than any other, successful treatment depends upon a thorough acquaintance with the mechanism of labor. The membranes should be preserved as long as possible, since the face is a poor dilator and the fore-water protects it from injury. In both anterior and posterior positions, the case should be allowed to proceed without intervention, so long as labor progresses satisfactorily. Failure of engagement of the face at the inlet calls for a conversion into a vertex, followed by high forceps or spontaneous labor in chin presentations, and podalic version and extraction in anterior chin presentations, or conversion and high forceps in both.

Prolapse of an Arm.—(1) In shoulder and breech presentations no treatment is required other than to secure the prolapsed arm with a sling in order to prevent subsequent extension alongside or above the after coming head.

(2) In instances of prolapse of the arm with the head when the latter is well engaged, an expectant treatment should be followed; and if delayed labor occurs, endangering fetus and mother, the forceps should be applied to the head, care being taken not to include the prolapsed arm, and the fetus extracted as in a medium or low forceps operation.

(3) Manual reposition of the arm may be preceded as a matter of duty, by an attempt at postural reposition—namely, placing the patient in the exaggerated semi-prone, knee chest or Trendelenburg posture. This is the same as in a case of prolapsed leg.

Prolapse of the Umbilical Cord.—In this condition a loop of the umbilical cord descends into the pelvis in advance of the presenting part.

Treatment: The treatment is highly important because of the high mortality among children. Whatever measures are instituted should be promptly applied.

(1) Preventive treatment consists in posture of the parturient, preservation of the membranes, and immediate correction of lateral displacement of the presenting part. Many cases are due to improper management of labor. The membranes should

never be ruptured prematurely without a positive indication, and the waters should never be allowed to gush from the uterus when the woman is in the erect or sitting posture.

(2) Curative treatment.—If the child is dead, the prolapse of the cord does not, of course, constitute a special indication, for the interests of the mother do not require that the fetus be extracted at once. If, before dilatation or rupture of the membranes, active interference is not indicated. Every effort should be made to prevent premature rupture of the membranes. The patient should be cautioned against straining and should assume the exaggerated latero-prone position on the side opposite to which the cord lies. The knee-chest position is also frequently used in causing the return of the cord. If the fetal heart sounds begin to fail, the cord should be pushed up between the pains, care being taken not to rupture the membranes. This should be done while the patient is in the knee-chest posture. If the cord does not return, the membranes should be ruptured, and sufficient descent of the head secured to retain the cord, by expression of the fetus or by using forceps. Or on the other hand, a version may be performed by the combined method, but without bringing the foot down in the vagina. The foot may be retained by a fillet.

In the treatment of prolapse of the cord after dilatation of the cervix, if the head remains above the brim and cannot be made to engage, there are two alternatives: manual or instrumental reposition or version. Too much handling of the cord, however, is dangerous to the fetus. If reasonable efforts at reposition fail, version should be performed, unless it is so dangerous to the mother as to be considered unjustifiable.

Manual reposition of the cord is best done while the patient is in the exaggerated latero-prone or knee-chest position. While counter pressure is made over the fundus, the hand should be passed into the cervix, the head pushed a little to one side, and the cord carried up beyond the head, and, if possible, to a position behind the neck. During this manipulation, the cord should be balanced on the tips of as many fingers as possible and not grasped in the hollow of the hand. This act of reposition should be done as rapidly as possible. Manipulations should be suspended during uterine contractions. The hand should

be gradually withdrawn, and the descent of the head in the cervical canal aided by pressure over the fundus, or by application of the forceps. After reposition, the woman should be placed on the side opposite to that at which the prolapse developed.

Instrumental reposition will become necessary if rupture of the membranes takes place before full dilatation of the cervix, since the time occupied in securing dilatation would very likely prove fatal to the child. The best repositor is the ordinary English catheter. The stylet is made to pass out from the eye of the catheter, a loop of disinfected bobbin is passed loosely around the cord, and is attached to the stylet, which is then withdrawn into the catheter, and pushed to the tip, in order to hold the tape in position. The catheter and cord are then carried up as far as possible, the stylet is withdrawn in order to avoid possible compression, and the catheter is left in position. Every effort should then be made to induce labor. If efforts at reposition are not promptly successful, manual dilatation, followed by version or forceps, should be performed.

Pelvic or Breech Presentation represents positions of the fetus in which the inferior pole of the fetal ellipse is found at the pelvic inlet, in the vagina, or at the vulva.

Treatment: During pregnancy we can often convert the breech into a vertex by external version. In handling a breech delivery, we should always bear in mind that it is a good plan to let the first stage progress as slowly as possible, and to retain the membranes as long as we can. This will insure for us a good full dilatation of the cervix. The breech is a very poor dilator hence the necessity of the above. At the appearance of the presenting part at the vulva, we should not use any traction, but await the delivery of the body to the umbilicus before so doing. When the feet and legs are born, they should be covered with hot towels. The umbilicus showing, we must now pull slightly on the cord and thus loosen it so that it is not subject to a pull during the completion of the labor. Traction should be made, at the same time, pressure being exerted above on the head in order to keep it flexed and thus prevent extension of the arms, the body being brought down and swung to either side so that we can deliver the arms and then the body is brought again

to the middle line and close to the perineum and traction made almost toward the floor so that we may get the head engaged at the superior strait. Then with the child's body resting on our arm, one leg on either side, we may put the fingers of the introduced hand on the malar bones and with counter pressure exerted on the occiput with the other hand, at the same time giving the body of the baby a sharp upward swing, we may slowly deliver the head. As a rule, if the head remains undelivered for five minutes or so, the child is usually asphyxiated.

While I was doing an Internship, I had my first breech case. It happened in the out-door department and as soon as the student who was sent to sit on the case sent his report to the hospital, myself and another Interne were sent there to complete the labor. On arriving, we found the feet presenting at the vulva. I had my mind fully fixed to deliver the case as I have just explained, but my fellow Interne insisted that I should start traction immediately and hustle the thing along. Accordingly, we administered chloroform by the drop method and soon got ourselves into a bad state of affairs. When it came to delivering the arms, we found that they were both extended. At this point the woman who was apparently taking her anesthetic very nicely, stopped breathing. One of us started artificial respirations on her and we were now fairly busy with both patients. In about ten minutes, I succeeded in delivering the child. We used all means to resuscitate the mother and child, but they were both dead. The woman was undoubtedly an alcoholic. This case taught me three things: (1) Never to hurry a breech; (2) Keep the baby's head flexed by superpubic pressure; (3) To beware of chloroform, especially in an alcoholic.

Shoulder Presentation.—Is so named from the shoulder being the presenting part.

Treatment: As soon as this condition is discovered, it should be remedied. Quite often, before the labor has begun, we may do an external version and if necessary, put on some pads and a tight abdominal binder in order to prevent it from receding to its former position. If the labor has begun we may try posture as explained above, and failing in this, we may do either an external, combined, or internal version. In case the shoulder has become impacted, it is a dangerous procedure to try a

version and then we should resort to the Cesarian section. Even though the fetus is dead, the section should be preferred to a difficult decapitation.

Occipito-Posterior Presentation.—The vertex presentation in which backward rotation of the occiput occurs. When a normal-sized head enters a normal pelvis with the occiput to the rear, if the head is well flexed and the necessary forces that enter into normal descent, rotation, and expulsion are present, labor, in a majority of cases, will terminate in a normal delivery.

A well flexed head in a normal pelvis enters the brim with its shortest diameter suboccipitobregmatic, in the same manner whether the occiput is front or rear.

The occiput being the most dependent part strikes the pelvic floor first and by the force of the uterine contractions above and the resistance below, follows the curved slope of the pelvis and is rotated downward, forward, and inward, until it reaches the under surface of the symphysis.

In the normal anterior position the head fits snugly into the lower uterine segment, because it is directed in the normal axis of the pelvis. During the contraction of the uterus this allows of equal distribution of pressure to all parts of the bag of waters.

Owing to malposition of the head which is found in occipito-posterior positions, with poor flexion, there is a great tendency during uterine contraction to early rupture of the membranes.

The prolonged labor then is due to the great difficulty of the cervix in dilating. This slowness and at times failure of the cervix to dilate is due to two factors, early rupture of the membranes, and malposition of the head.

The clinical picture offered by these cases where we have the membranes rupturing at the very onset of labor, the slow onset of labor with weak, naggins, ineffectual pains, exhaustion of the mother from long labor and backache, and the slow dilatation of the cervix, all these should make us suspicious of a faulty presentation.

The weak and infrequent pains at the onset may be stimulated by keeping the patient on her feet and administering strychn. sulf. gr. one thirtieth and quinine grs. five every three hours until the pains are more strong and frequent.

If the membranes have ruptured and the head is not in the pelvis far enough to prevent the loss of fluid the patient should

be kept in the prone position until the head is well engaged. By preventing the escape of the liquor amnii from the uterus, we protect the child from the effects of a prolonged labor, and if version becomes necessary it may be performed with less danger of rupturing the uterus.

The patient should not be instructed to bring her voluntary muscles into play until the head is well down in the pelvis and the cervix well engaged as it tends to exhaust her.

After the pains have continued for eight or ten hours without any apparent change in the cervix, gr. one quarter of morphia may be given and this usually allows the patient to get a short rest.

After the head is well down in the pelvis and the pains are strong and frequent, progress of labor may be helped by increasing flexion. This is done by inserting two fingers in the vagina and pushing up on the frontal portion of the head during a contraction. This is a very valuable aid, at times.

In some cases, rotation can be brought about after the cervix is partially dilated by inserting the hand into the vagina, grasping the head in such a way as to increase flexion and at the same time pushing upward to forcibly rotate the occiput to the front. During this procedure, with the other hand on the abdomen, the anterior shoulder should be rotated toward the median line. If the head is held in this position for two or three pains, rotation may become complete.

But, at times, however, in spite of everything that we do, the head remains persistently in the occipito-posterior position. The question that naturally arises now is,

"When to interfere." One-half to two-thirds of all occipito-posterior cases rotate spontaneously. These cases need no interference provided the mother and baby show no signs of exhaustion; however, it is not always possible to tell whether a head will rotate, but we can, by watching a case for a certain period, tell whether or not it has made any change of position, or whether it has made any advance. If there has been no change for two hours after the beginning of the second stage, other conditions being normal, it is hardly probable that there will be any, and it is best to interfere.

It is not always wise to wait two hours, and it is better to pay more attention to the condition of the mother and babe than

to the cervix, the two-hour period, or to the fact that the head may rotate spontaneously. Very frequently a woman will not get a fully dilated cervix by her own efforts, and especially is this true in occipito-posterior cases, and in such a case a woman may die from exhaustion before her cervix is dilated.

One word as to some of the signs of exhaustion:

In the mother: a rise of temperature; a feeble, rapid or irregular pulse; a uterus which does not relax sufficiently between pains; a discontinuance of pains.

In the child: marked increase or decrease in the fetal heart or an irregular pulsation.

Granting that all the above methods have failed, we have now to choose between forceps application and version. If the head be floating above the brim and by our examination we decide that it can come through, the first step is to rotate it with the hand. The external hand may be of some service in attempting to rotate the body through the abdominal wall. The tendency of these heads is to assume again the occipito posterior, or, at least, a transverse position after the hand has been withdrawn, and we must resort to other means. The application of the blade of the forceps in this condition is difficult, and in most cases, if conditions will permit of a version, it is the better and easier procedure. Now and then, however, if the pelvis is normal, a slightly larger head may be delivered by forceps than version, because time may be given it to mold. If the head is soft the forceps is more apt to slip, while the soft head is of advantage in version.

If, after rotation, the head remains anterior, the question is no longer one of occipito-posterior, but the patient has in all probabilities used her pains to push on an occipito-posterior head, and by the time it is corrected has not enough strength left to mould the head and complete the birth, so most of these cases require more help, and the rest of the procedure should be considered a part of an occipito-posterior delivery, and if a satisfactory application of the forceps is not made quickly resort should be had at once to version.

If the head is just engaged, the same methods are used as for a floating head, for in an attempt to rotate it with the hand it is usually pushed above the brim.

We come next to those cases where the head becomes lodged in the midpelvis. If it were possible in every one of these cases to rotate the fetus by the hand following this by a cephalic application of the forceps, this would be the best procedure, for there is apt to be less damage done rotating by the hand than by rotating by the instruments.

The Scanzoni method is sometimes of use when the others have failed. This consists in the pelvic application and by a wide sweep of the handles rotating the head, removing the blades and reapplying with a cephalic application. The objection to this method is the damage that might be done to the fetal head on account of the bad application and to the maternal parts in the rotation.

In a large proportion of cases when the head has spontaneously reached the perineum in an occipito-posterior position, it may be rotated to the anterior position by either the manual or instrumental method.

Management of Twin Labors.—As the great majority of twin births terminate spontaneously, non-intervention should be the rule, especially in vertex presentations. If the inertia is unduly prolonged, the membranes should be ruptured at a period somewhat earlier than in single births. The first step after the first child is delivered and the cord ligated is to make a vaginal and abdominal examination. If the second fetus be found in any but the shoulder presentation, there should be no immediate intervention save for causes to be described later, since in most cases delivery is easy and because, owing to the danger of a post-partum hemorrhage, the rapid emptying of the uterus is inadvisable. If the second fetus is found in the shoulder presentation, external version and failing in that, internal version should be done. In speaking of this condition, it makes me recall a very interesting case I had the pleasure of seeing. I was called to see a case in labor and when I arrived there I found that one child of twins had already been born and that the other was a shoulder presentation and was being delivered as such through the process known as spontaneous evolution. Post partum hemorrhage after the first labor is a complication with which we must reckon. It must be remembered that tears of the cervix, vagina and perineum are very rare in twin labors, and

that the appearance of hemorrhage after the first birth points almost certainly to a placental origin. If the placenta is single, the escaping blood is a menace to the child coming after; if double, the second child is not compromised. In any case of uncertain diagnosis, the second child must be given the benefit of the doubt and delivered at once. Failure of the fetal heart is an indication of intervention. In the case of hemorrhage or other source of danger to the mother and second infant, the latter should be rapidly delivered. If, after an hour or thereabouts from the birth of the first child the uterus does not contract, the condition of atony usually demands intervention. Some authorities see no harm in waiting as long as three hours. Many cases are on record where the second child has remained in utero for several weeks and been delivered in vigorous condition. Hence, if the first child is premature and is followed by its placenta, it may be wise to leave the second child in utero, that its chance of ultimate survival may be improved. As a rule all the secundines are expelled after the birth of the second child. A fairly large dose of ergot should be given after the completion of the third stage.

While there may be other presentations about which I could speak, I will refrain from doing so on account of their rarity and the time that you have listened to me already.

Although you may feel that my paper has been unduly lengthy, there are many vital points that I have left untouched. These very important topics which we are discussing are the most abused of all in the practice of medicine and surgery. Women, and children, growing to maturity, crippled for life, are about us on every side and I am sorry to say that their infirmities, in a great many instances, are due to our blunders. The sooner that the profession recognizes the fact that every man with his sheep-skin is not competent to handle the most difficult obstetric cases, the better it will be for us and for humanity in general. As it is quite necessary for an abdominal surgeon to have a special training, so it is for the accoucheur.

Gentlemen, I thank you for your attention. If I have brought out one single point in my paper this evening that will aid in any way for the relief of the pregnant woman and the preservation of the unborn babe, I feel that I am well repaid for the time that I took in so doing.

UTERINE INERTIA.

By PAUL T. HARPER, M. D.

It is not the purpose of the writer to present either a complete or a systematic discussion of this frequent and interesting complication of labor. The following paragraphs are written to emphasize, first, the general significance of uterine inertia and later its manifestations in and the more important methods of treatment to be applied to the particular case. They are intended for the general practitioner by whom the majority of these cases will continue to be seen.

Labor progresses as the forces of expulsion exceed those of resistance. Conversely, labor is obstructed as the latter exceed the former. It is retarded as the strength of the one approaches that of the other.

Resistance is more or less constant. Consider it diminished because of relaxed and lacerated maternal soft parts and labor becomes shortened, even precipitate if expulsion be sufficiently strong. Resistance may be increased; but the rigid cervix and rigid perineum are rare, the rigidity readily yielding before satisfactory pains as it does to artificial dilatation and stretching and labor practically never is prolonged because of them.

Force from behind is inconstant, varying markedly in different labors and often at different periods in the same labor. Increase in strength of the expulsive forces is rare and then usually relative; the consequent rapid advance being due to some such condition as has been described or to the fact that the passenger is small for the canal it is to travel.

The forces of expulsion, in greater part, are expended in uterine contractions. These may be weak, they may recur infrequently and be of short duration. Whether one or all of these characteristics present themselves in a given case, the net result is the same; namely, lack of advance in labor. To the foregoing condition of under-action, the term uterine inertia is applied. Inertia manifest from the onset of labor is called primary, that appearing later secondary.

The etiology of the condition is familiar. The under-developed organ may be inherently weak as is the uterus in the frail and under-nourished individual or in the one debilitated by constitu-

tional disease; or its function may be impaired by associated inflammatory processes and new growths of the generative tract; and by repeated child-bearing, especially if labors have been prolonged.

Previously-active uterine muscle may become inert from the reflex inhibition of a distended bladder or rectum. Apprehension, association of time, place and person and intense suffering because pains have been unusually severe or have been poorly borne similarly impair muscular efficiency. Malposition and presentation and moderate disproportion or pelvic deformity, where spontaneous delivery is to be expected, as frequently occasion underaction of uterine muscle as the opposite. Again, little muscular efficiency is to be expected in those who, because of actual disability, indifference or what charitably may be termed 'lack of time,' have been denied the benefits of systematic though simple exercise during pregnancy.

The foregoing etiological factors are quite as commonly seen in combination as separately and uterine inertia in the highly organized, comfortably situated woman, whose child is absolutely or relatively large, is one of the commonest obstetrical complications.

Inertia cannot be determined until actual labor has started. It must be borne in mind that near full-term pains may persist at infrequent intervals for hours. But if there is neither 'show' nor progressive dilation of the cervix, labor has not begun; therefore there can be no inertia. On the contrary, the uterus gives evidence of future action rather than the opposite.

When the pains of actual labor are weak, infrequent and infecc-tual, the diagnosis of inertia is usually simple. But it depends not so much upon the character of the pains as upon the result of them and is to be made only as labor, in the face of them, does not advance. The onset of labor in the particular case may have been insidious; pains may have recurred only at intervals of half an hour and with scarcely any appreciable increase in intensity. Labor may be progressing far less rapidly than the patient or physician would wish. But if examination at this time reveals a cervix that is undergoing dilatation, one is dealing with a uterus the action of which is slow but far from inert. Primary uterine inertia is not to be diagnosed because the first stage of labor

has progressed beyond fourteen or sixteen hours which is properly called the average rather than the normal duration of this period of labor in a primipara.

The secondary is the commoner variety of inertia. It usually appears during the second stage of labor, oftener earlier in it than late when the clinical findings are as follows: head usually in the mid-pelvis, cervix fully or partially dilated, membranes more often ruptured than intact, pains recurring at frequent intervals, their duration prolonged and associated with them an inclination to hold the breath if not to bear down. This change in the character of the pains rather than the complete dilatation of the cervix (which in the particular case may not occur) must be accepted as marking clinically the transition from the first to the second stage of labor.

Secondary inertia offers little difficulty in diagnosis. But the overactive may simulate the inert uterus and, because of the radical difference in treatment required, the following condition constantly must be borne in mind when confronted by second stage delay. There commonly occurs in definitely obstructed labors and occasionally in those prolonged because of mild degrees of disproportion, premature rupture of membranes or such less serious presentations as breech and brow a period when the overactive uterine muscle ceases to contract and relax with regularity and goes into tonic contraction. This state of uterine muscle may or may not be painful but it is invariably accompanied by no advance and gives definite physical signs as the whole uterus, or a zone of it, is involved. Thus all subjective and many objective signs of an inert uterus may be presented by one that is not only not inert but actually overactive at the time.

The dangers of primary uterine inertia are trivial. As long as the membranes remain intact, there is practically no danger to the child or to the maternal soft parts from pressure. If the patient is infrequently and carefully examined the danger is no greater. The first stage of labor may be prolonged for days at a sacrifice of no more than the patient's peace of mind and with some gain for the head is descending and accommodating itself by moulding to the shape of the pelvic canal.

With the secondary inertia, the situation is different. Pressure

necrosis of the material soft-parts and foetal asphyxia in an underactive uterus are possible though infrequently seen. However, greater dangers arise from improper and untimely efforts at operative interference. They are infection from vaginal and intra-uterine manipulations, hemorrhage following the artificial emptying of a uterus that is as incapable of contracting down upon itself to prevent undue bleeding as it is of advancing labor, and laceration. The possibility of injury to the child's head is properly mentioned.

In each variety of inertia there exists the dangers of undue bleeding during and following the third stage of labor and of subinvolution during the puerperium.

In view of the causes underlying primary inertia, its prophylactic treatment is unsatisfactory. Systematic though simple exercise during pregnancy is of definite value and the use of strychnia in small doses for the last weeks has been suggested. The actual treatment requires the elimination of all possible causes of secondary inertia that would aggravate a primary condition of mild degree and demands offers of encouragement and the exercise of much patience for labor is progressing even though slowly. Quinine is of questionable value in this condition and ergot is contra-indicated.

Mention should be made of the use of the extract of the pituitary gland. The contraction of uterine muscle caused by this agent is marked and occurs with varying intensity in different individuals. Uterine overaction early in labor could result in forcing the head into the mid-pelvis before moulding had progressed sufficiently to insure anterior rotation of the occiput and spontaneous termination of labor. Again, overaction might result in premature rupture of the membranes with consequent delay in dilatation of the cervix and early retraction of the uterus about the child. The use of pituitary extract in primary inertia therefore, if it occasions no more untoward effects than lack of moulding, dry labor and the remote possibility of tonic uterus, entails risks one should hesitate to assume. In uterine inertia with membranes ruptured, if there be any disproportion or interference with the mechanism of labor due to unfavorable presentation, its use definitely increases the danger of tonic contraction of the uterus or of zones of it with the possibilities of

intra-uterine asphyxia of the child and of rupture of the organ from attempts at operative treatment of the apparent inertia. In rare cases where the child's head reaches the perineum and fails to advance, pituitary extract could without doubt be safely employed as a substitute for the simple low-forceps operation. This powerful stimulant of uterine muscle has been and is being used quite indiscriminately in prolonged labor much as was ergot years ago. Pituitary extract is a dangerous and as yet not sufficiently understood addition to the obstetric armamentarium and is far less generally administered by obstetricians than might be inferred from the favorable clinical reports of its use circulated mainly by those who supply the demand for it.

Secondary inertia is usually the result of a combination of factors the actual significance of any one of which, in the individual case, is hard to determine. Successful treatment of the condition demands this point of view. For instance, more patients are delivered spontaneously with bladders full than recover promptly from uterine inertia following the removal of perhaps twenty ounces of urine by catheter. Yet the distended bladder alone can occasion uterine inertia. In the particular case, it may be the essential cause; empty the bladder and the question is answered. The same can be said of apprehension, fear for her own life and that of her child, aversion to the presence of a particular physician, nurse or friend, and of undue suffering. Therefore, meet the patient's apprehension and fear with confidence and assurance, surround her only with those whose presence she desires, eliminate all unnecessary suffering by the judicious use of anaesthesia; and note the result.

Suppose that one by one what might be called the psychic causes of inaction have been eliminated and that the condition persists. The uterine muscle has yet to be considered. Is it ineffectual because temporarily tired from long-continued over-action or is it simply unequal to the task of propelling the actually or relatively large child through the pelvic canal? Rest is demanded for tired uterine muscle. Administer chloral or morphine; the latter drug especially diminishes subjective pain and depresses, though with varying degrees of intensity in different individuals, the activity of uterine muscle. Assure the patient quiet and a supply of fresh air and give simple fluid nourishment.

Temporarily tired uterine muscle regains its tone after a relatively short period of rest (commonly from one to three hours) and is then stimulated by the same drug that earlier depressed it. Should inertia still persist, there remains but one conclusion; namely, that the muscle is unable to perform the work at hand and requires operative aid.

Operative interference in uterine inertia entails certain dangers, necessitates skill and should be decided upon only as all other possible and readily remedied causes of the condition have been eliminated. No one appreciates these facts more than the obstetrician who, when confronted with second stage delay, exhausts all possible resources in an effort to restore the uterus to active contraction, watching constantly the foetal-heart rate for evidence of embarrassment, before operative measures are employed. If, because of inexperience, the physician is in doubt whether or not to interfere in a given case, fortune almost invariably will favor his expectancy.

Of the operative procedures in uterine inertia, medium forceps as applied in cases of anterior position of the occiput alone will be considered; this because the commonest manifestation of inertia due to muscular insufficiency is lack of advance in the second stage of labor, the usual location of the head is in the mid-pelvis and of the occiput anterior, and the customary method of treatment is by means of forceps. It is unnecessary to enumerate the dangers of the operation but in the condition under discussion they must be emphasized for hemorrhage is to be expected when an inert uterus is forcibly emptied as are traumatisms to the maternal structures and the child when forceps are applied through an undilated cervix and forcible traction made upon a head that is inadequately moulded; and shock and infection depend in great measure upon just how the operative procedure has been carried out.

Intra-partum and post-partum hemorrhages are highly preventable. They occur because the uterus does not retract satisfactorily either about the placenta during or upon itself following the third stage of labor. The preventive treatment in normal labor consists in energetically following down the uterus as the child is born and in maintaining persistent though gentle massage of the organ during and for one hour following the third stage

of labor. Obviously additional caution is necessary in uterine inertia. Here the uterus must be stimulated to active contractions and emptied only in the presence of them; the irritation of the hand or of instruments almost invariably occasions contractions; massage of the fundus and earlier rest increase their intensity. It follows that the operation, except in the rare instances where haste is necessary to save the life of mother or child, must not be hurried; its purpose is to supplement the expulsive forces of the uterus rather than to offer a substitute for them.

In a majority of the cases of true secondary inertia, the external os does not dilate fully. Its diameter frequently amounts to no more than two inches and the thickness of its rim to no less than one-fourth of an inch. Such a cervix is dilatable but not rapidly so, fully twenty minutes being necessary so to increase its size by gradual digital and manual dilatation that it can be pushed beyond the bi-parietal diameter of the child's head or can be made to accommodate the operator's closed fist if the head is still too high to distend it. A forcible attempt to draw the head through an undilated and moderately resisting cervix is invariably successful and quite as frequently attended by laceration, if not by bleeding from rupture of its circular artery. Only in the exceptional case where haste in delivery is demanded may forceps be applied through a cervix that is not fully dilated. The artificial dilatation of the structure requires time and patience but, when indicated, is an essential preliminary to the application of forceps.

Of especial importance are the questions of the application of the forceps, the amount of traction necessary, and when and in what direction it should be applied.

In the group of cases under discussion the occiput rarely has rotated anteriorly; because of insufficient moulding or lack of expulsive force from behind it remains in the right or left oblique diameter of the pelvis. It follows that in pelvic application of the forceps one blade will rest over an eye and the other behind the opposite ear. When, as a result of traction, the head has advanced and the occiput rotated anteriorly the blades are released and applied to the sides of the child's head. That traction may not interfere with anterior rotation, it is necessary to know whether the occiput lies to the right or to the left.

Because pelvic application may be employed without this point being definitely settled in the operator's mind, the method is not without objection. In cephalic application of forceps, the position of the occiput must be known. The blades are applied to the sides of the child's head and, before anterior rotation has occurred, lie in an oblique diameter of the pelvis; with traction can be combined an effort to rotate the occiput anteriorly, when re-adjustment of the blades is not necessary. In mid-pelvic forcep operations, practically never should the head reach the perineum with the blades applied to it obliquely. When this does occur, the skull has been subjected to pressure at points structurally weak and its soft parts almost invariably bear pressure marks if not more serious injuries.

While the choice of the type of instrument is of secondary importance, it should be said of the solid-blade forcep that, as is claimed, it does slip but only as one attempts other than the conservative application to the sides of the child's head. On the other hand, the fenestrated-blade instrument unfortunately holds wherever applied.

The amount of force necessary to accomplish delivery by forceps depends upon the degree of inertia on one hand and upon the absolute or relative size of the child on the other. It must be admitted that traction is employed to supplement the uterine contractions. Therefore it should begin with the contraction, the force employed should be gradually increased as is the intensity of the 'pain,' traction should be maintained while the 'pain' persists and be discontinued wholly when it has ceased. Reasonable force is being employed if advance is evident as the net result of several rather than of a single effort at traction. With the mechanism of labor clearly in mind and with all possible aid from the contracting uterus itself, the actual force required is considerably less than the general operator commonly expects to employ and should, with the rarest of exceptions, never tax his strength to the limit. The assertion of some obstetric authorities that 'the amount of force exerted by the operator is in inverse ratio to his skill' may well be seriously considered even though, like all general statements, it is extreme and untrue in the individual case.

Traction must be employed in the proper direction. It has

been shown that the mechanism of labor is retarded or stopped as inertia develops. Though supplemented by aid from without, the remaining steps as far as the presenting part is concerned must be gone through with; that is, the occiput must rotate anteriorly, the head must descend and escape from the pelvic canal by extension. Anterior rotation of the occiput has been discussed. Descent commonly occurs with it. The pelvic canal, until the level of the ischial tuberosities is reached, is directed downward and backward. Therefore, in advancing the head, traction must be exerted in that direction until its bi-parietal diameter has reached the point mentioned. Extension at that time begins, when the direction of traction is constantly changing until, at the outlet, it is directly upward.

Perineal laceration is perhaps more apt to occur than in normal labor but only because of the size of the child, which possibly has occasioned the inertia. The fact that instrumentation has been employed of itself should decrease the chances of laceration because the operator's control over the advance of the presenting part is perfect and the stretching of the perineum is as gradual as he sees fit to make it.

Shock is no more to be expected than infection when the operative procedure has been well carried out.

The foregoing consideration of forceps in uterine inertia is not intended to be complete. No mention has been made of such important items as anaesthesia, the preliminary preparation of the patient, the actual delivery of the head or the conduct of the third stage of labor. It is written to emphasize some of the more important features of and with the hope of inspiring possibly a more wholesome respect for a difficult and serious surgical procedure.

PELVIC CELLULITIS.

Read before the Glens Falls Medical Society, January 5, 1913.

By DOUGLAS C. MORIARTA, M. D.,

Saratoga Springs, N. Y.

Mr. President and Gentlemen of the Society:

Pelvic infection is a subject of such importance that it may profitably come before a body of practitioners at any time; therefore I have ventured to repeat a former subject.

I doubt if all of my hearers realize that the management of these anxious cases has only been settled in the last quarter of a century. However, such is the fact. I remember very well almost the last time the Class of '85 was called together; it was by Dr. Vanderveer, that he might give us an additional lecture on the treatment of uterine septicemia by curettage of the uterine cavity. I distinctly recall his extreme earnestness in endeavoring to impress upon the class the value of this procedure. The indications for operative interference, at that time, were not as well differentiated as at present.

I shall not attempt a review of my topic, but shall confine my remarks to a consideration of the common types of infection in the female pelvis, the etiological organisms, the routes traveled by them, and their treatment.

If one wishes to render his patient the very best care in these conditions, it is essential that he should know the course of the pelvic lymphatics, and the usual symptoms from the several organisms which are factors in these infections. With this knowledge, if he is able to locate the point of infection, his course of procedure will be generally more scientific.

In the early days of uterine curettage, we cured all of our sapremic cases, as we do now; while many of the other types of infection went over the Great Divide; for we did not then know or differentiate, bacteremia, and consequently did not know the cases which should be let alone. We simply curetted all septic cases, and if they did not get better, we curetted some more.

Pelvic infection usually begins in lacerations incident to labor or miscarriage, or from infection at operative procedures. The infection is disseminated by way of the lymph glands, or by the blood vessels, and by continuity. The organisms most likely to be etiological factors in these infections are gonococci, streptococci, staphlococci, and the colon bacillus.

It is very difficult to determine the exact nature of a pelvic lesion, when the pelvic contents are bound down and matted together; and it can only be done by reading correctly an accurate clinical history; and even when this is done, preoperative conclusions are occasionally wrong. However, a diagnosis must be attempted, as it is essential in deciding upon the opera-

tive procedures to be undertaken. Conclusions as to which route should be followed in operating, will have for their foundation the clinical findings, depending upon the point of infection, the infecting organisms, the stage of their development, and the tissues involved.

I would emphasize that operations in acute pelvic infection should be limited to those for drainage and for peritonitis, and are usually best done through the vagina. Exceptionally in peritonitis the abdomen might be opened, though this is a hazardous procedure. If we do open the abdomen in these conditions, we should make a quick incision, drain, place the patient in Fowler's position, and use normal salines, after Murphy's method; though Murphy states in volume six of his Clinics, that to operate in this type of infection always means a fatality.

Vaginal incision to be of value must be free. The earlier the pent-up pus is released in pelvic infection, the less damage will be done to the pelvic contents. Such abscesses in the pelvis, where the walls have no epithelium, when incised, and drained, promptly recover. Also bear in mind that all tissues subjected to continuous pressure may die; and that an incision through the posterior vaginal wall will always prove useful when there is pressure, though it may not be curative.

An incision in a pyosalpinx is useless as a curative measure, though it is often useful in relieving pressure. If there is any doubt concerning the diagnosis in a pelvic tumefaction, incise behind the uterus, break up the adhesions, and pack with iodoform gauze after Pryor's suggestion. Later, when the case has become chronic, and the pus probably sterile, a coeliotomy is indicated to remove the pus tubes, if of gonorrhoeal origin. If of other origin, it may be necessary to remove the organs, or simply break adhesions and restore the parts, as far as possible, to a physiological condition.

Conservative surgery of the infected pelvis is always a question. It has been positively taught in the past that it was dangerous to save tubes containing purulent or milky fluid; yet Franklin Martin believes and practices, in cases of chronic salpingitis, that when there is fluid in the tubes which can be squeezed to the distal ends, that by pressure the fluid so squeezed will open the Fallopian orifices, and that they will remain open,

and that as a consequence recovery will follow. I believe this point is still debatable, and that careful and extensive observation is necessary to determine it. Personally I am inclined to think it is conservative surgery to remove tubes and ovaries that are diseased.

The septic infections of the uterus, whether at term or because of an abortion or traumatism, will follow the same channels, *i. e.*, the lymphatics and blood vessels. So we may very definitely determine by analysis the condition of the patient and our method of procedure, if we know the point of infection and the infecting organism.

The uterine lymphatics exist in the three layers of the uterine wall, though chiefly in the muscularis, and they terminate in three separate regions. The superior group drains the top of the uterus, and terminates in the lumbar glands on either side. The middle group drains the body of the uterus, and terminates in the external iliac or inguinal glands. The third group drains the vagina and cervix and infects primarily the broad ligaments. Accordingly, if infection occurs at a tear in the cervix or perineum, it will be carried by lymphatics to the broad ligaments. If the infection occurs from the body of the uterus, it is most likely to start at the placental site, as a periphlebitis in the placental veins. In sapremia, the infecting poisons may be absorbed by the mucous membrane of the uterus, or through open wounds, at the site of the placental attachment, through the lymphatics, or directly into the circulation.

Streptococcal infection is both virulent and rapid, and is not stopped by the lymph glands, but seems to find its way into the circulation at once, and the patient dies in a few days of toxæmia and peritonitis. Staphylococcal infection, on the other hand, proceeds more slowly, is arrested by the lymph glands, and terminates in local abscesses. Another result may be a septic foci, finding its way into the circulation either as a thrombus or an embolus, with their corresponding symptoms.

The gonococci travel by continuity; they start at the vulva or the vagina, and travel until they reach the endometrium, and thus on to the tubes. Gonorrhœa is said to be the etiological factor in 80% of all pelvic diseases of women. The gonococci usually confine themselves to the epithelium, that is, they pro-

duce a surface infection, though they occasionally infiltrate the underlying tissues. Their usual destination, however, is the epithelium of the Fallopian tube. Here they start up an inflammation or salpingitis, which ultimately extends the entire length of the tube, and eventually seals the Fallopian end: while at the proximal end, an inflammatory stricture is formed. Thus both ends of the tube are sealed, and always remain so in gonorrhoeal infection; if pus develops, we have a gonorrhoeal pyosalpinx.

In the acute stages of gonorrhoeal infection of the tube, the pus is thick and yellow; later it becomes thin and watery; when this occurs, the micro-organisms have disappeared, and the fluid has become sterile. If the inflammation extends through the structures of the tube, a localized peritonitis develops, with the formation of many adhesions, eventuating in the matting of the pelvic contents together. Occasionally gonorrhoeal peritonitis extends, and involves the general peritoneum; this is rare, although it unquestionably does occur. Thus gonococci may produce a salpingitis, a pyosalpinx, and a peritonitis, but never a pelvic cellulitis.

Tuberculosis in the pelvis usually exhibits itself primarily in the Fallopian tube, and is generally disseminated into the other tissues. The channels of tubercular infection are the blood, the lymphatics, and by continuity.

The treatment should, if possible, comprehend the primary focus as well as its complications; yet this is not always possible, unless it happens to be easy of access without destroying the adhesions, which are nature's barriers in protecting the economy. In the ascitic type, simply close the abdomen. In the inflammatory condition, do not disturb the tissues by breaking up adhesions, unless to remove a focus easy to reach. The cheesy or degenerative type needs only to be cleaned up carefully, and drained with as little trauma as possible.

The necessity of an accurate diagnosis before uterine instrumentation is attempted, cannot be too strongly emphasized. To make such a diagnosis, a knowledge of septicemia and sapremia, with their points of differentiation, is essential. Septicemia is a disease due to one or more of the pathogenic bacteria, or their products, or both, occurring in the tissues of the body. Thus

the parasites may or may not enter the circulation; if not, then the poisons which are produced by their vital activities do, and so produce toxemia. Or, as cited, the two causes combined may produce the septicemic symptoms.

When only the products of putrefaction are present in the blood, the term sapremia is used by some writers to designate the pathological condition. In a general way, this condition is spoken of as a toxic form of septicemia, as opposed to bacteremic forms in which bacteria are in the blood. When the source of production of these putrefactive toxins is removed, the toxemia ceases almost at once. When this does not occur, the surgeon must remember that he has a mixed infection, which will modify the diagnosis and treatment.

In sapremia, we have a sudden rise of temperature, a chill, a rapid pulse, and an offensive discharge, which immediately subsides when the foci of putrefaction have been removed. In septicemia or bacteremia we have general systemic symptoms of poisoning, which do not show improvement upon uterine instrumentation.

To quote Murphy again, he says, "If there is an infection and no retained placenta, and a curement is done, your procedure signs the patient's death warrant, because you open up areas of infection already closed." I have seen many of this type, in the early days of curettage, and they all ended the one way—in death. They should *not* be curetted.

If in doubt concerning the actual condition,—even if there is heat and induration, associated with pain, with or without a chill, a rapid pulse and some temperature,—avoid curement, unless the character of the organism has been determined bacteriologically. Irrigate the uterus and pack with iodoform gauze. Then follow with a colpotomy, and again pack with iodoform gauze, as so well exemplified years ago by Pryor, and seemingly forgotten now by many of us.

If instrumentation of the uterus is attempted, it should be done with extreme care by the experienced hand. Though mechanically simple of execution it is often attended with grave results. Often a forcep will serve one quite as well as a curet, if not better, in cleaning out a uterus. If it can be used, it is much safer.

In conclusion, it is my experience, and I feel sure you will agree with me, that we occasionally meet a professional brother who apparently believes the danger from a curettage is nil, and is even careless in doing one. Equally true is it that these men are liable to curet a uterus, from which a general septicemia has occurred, as they would one with a sapremic infection; and they seem entirely unconscious of the fact that the procedure in the septicemic condition is not only useless, but is often injurious, if not fatal.

Clinical and Pathological Notes

The Human Ostrich—Case and Exhibit. By S. C. BURTON,
M. D.

No. 42358—L. E. P.—H. of C. Age 33—5 ft. 11 in.—White.
No. Commitments, 12. Jan. 16, 1906—18 mos. H. of C.
Pardoned Feb. 10, 1907.

A short time after his arrival at the prison he complained of pain in his bowels, and laid in his cell for a couple of days.

He was given a dose of castor oil. No further complaint for about two weeks, when he again came in from the work shop with a sick card from the warden, sending him to the hospital, thinking that he was malingering, which is an art with long-term men. At this time he again complained of the pain in his bowels, which seemed to be more general than in any particular part. He was given a dose of calomel, followed by a saline, kept in bed on a light diet for several days, when he asked to be returned to his cell and on the work list. When on the sick list he loses his allowance of chewing tobacco and he seemed anxious to get back to it.

On February 16th he again came in on the sick list and said he could not stand at the bench to work any longer, and wanted to go into the sick ward for treatment. He was again placed in hospital and a large dose of oil given. The following day he said that he had passed a nail through the bowels. When asked where it was he said that it went down the sewer. He said that after the nail came away he felt better, as most of the

pain at that time was low down in his bowels, although at times the pain seemed to be general.

He was given a cathartic at night for several days without any results, his stools being examined each time. He then gave the following history of himself: "I have been for several years what is known among world men as a freak bum. I would get down and out and without money or friends, would go around the saloons looking for a drink, and was not always asked. Then I would offer to bet that I could swallow this or that, producing the article and swallowing it for the price agreed. I have swallowed a bolt such as is used between the knobs of a door, pocket knives, keys; nails, from a shingle nail to a ten-penny nail, and many other things."

After this statement he was given all he wanted to eat. Three times a day he was given four ounces of olive oil. Every second day he was given three ounces of castor oil. This treatment was continued for a period of two weeks, with the results as shown in the exhibit. The oil was increased in doses until he was unable to digest it and it came away as given; no more hardware in evidence, all treatment was stopped.

It will be noted in exhibit that one key shows but little erosion it being nickel plated; all others show well-marked erosion from digestive fluids.

The knife to the left has sides of celluloid with only slight erosion, both blades being gone.

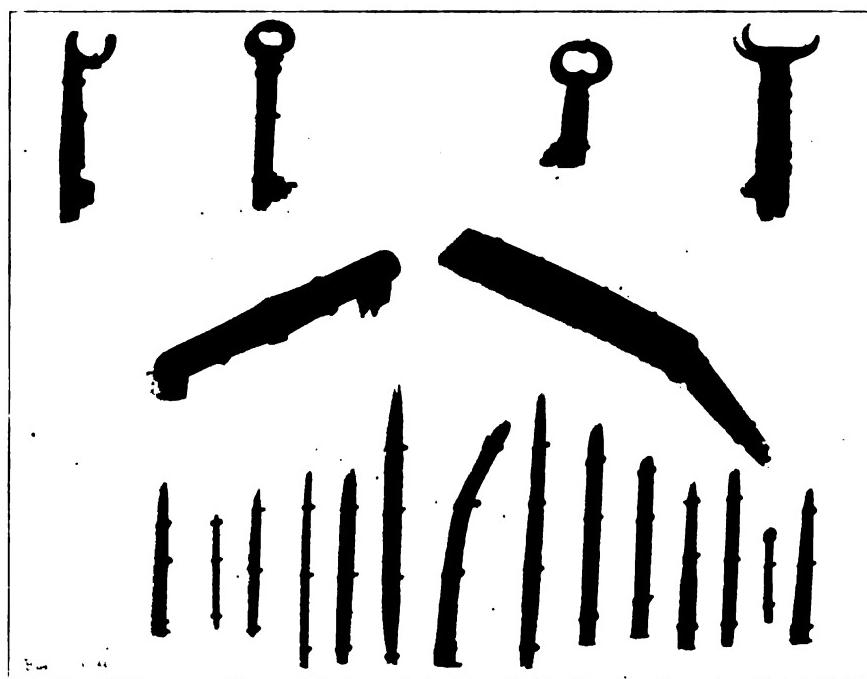
The knife to the right had sides of mother of pearl, both are gone by action of digestion, one blade completely gone, the other well under way and perforated.

It will be noted the peculiar blue color of all the nails. No nail smaller was ever swallowed than a shingle nail, all diameters have been reduced by digestion, also the sharpened condition of the points.

Several months later he was again arrested for being drunk, and at that time complained of severe pain in the abdomen. He was sent to a hospital and his case diagnosed as appendicitis, and was told he would have to be operated upon. To this he demurred, saying "I am the human ostrich; my stomach is full of nails." An X-Ray was taken, which showed a bulging of the greater curvature of the stomach. The stomach was

To Illustrate Dr. Burton's Article on "The Human Ostrich—Case and Exhibit"

Albany Medical Annals, September, 1913



opened and it was found that a sharpened nail had perforated the stomach wall. This nail, with thirty-nine others, were removed. He made a good recovery in time, and is now again a prisoner and in my care, but no more nails.

Editorial

Towards the middle of May, the Bills of Mortality began to swell greatly in amount, and though but few were put down to the plague, and a large number to the spotted fever (another frightful disorder raging at that period), it is well known that the bulk had died of the former disease. The rigorous measures adopted by the authorities (whether salutary or not has been questioned), in shutting up houses and confining the sick and sound within them for forty days, were found so intolerable, that most persons were disposed to run any risk rather than be subjected to such a grievance, and every artifice was resorted to for concealing a case when it occurred. Hence, it seldom happened, unless by accident, that a discovery was made. Quack doctors were secretly consulted, instead of the regular practitioners; the searchers were bribed to silence; and large fees were given to the undertakers and buriers to lay the deaths to the account of some other disorder. All this, however, did not blind the eyes of the officers to the real state of things. Redoubling their vigilance, they entered houses on mere suspicion; inflicted punishments where they found their orders disobeyed or neglected; sent the sound to prison,—the sick to the pest-house; and replaced the faithless searchers by others upon whom they could place reliance. Many cases were thus detected; but in spite of every precaution, the majority escaped; and the vent was no sooner stopped in one quarter, than it broke out with additional violence in another.

Old St. Paul's.

W. HARRISON AINSWORTH



On June 28, 1913, the officers of the The Eighteenth Anniversary of the Bender Laboratory, together with the past directors, celebrated the eighteenth anniversary of the opening of the laboratory, and in the various addresses at the time the origin and development of its work were described.

As the quiet daily routine of such an institution attracts little attention, its usefulness and power are not always known in the community which it serves. If we pause to reflect upon its help to the profession not only would the great power of this institution have full appreciation, but the further thought of the distress which would follow upon its loss or absence suggests at once how necessary the laboratory has become. Distance sometimes gives a perspective which propinquity lacks, and the physicians of Albany and the neighboring country whose quality of practice depends so largely upon this institution understand better what a potent agent they have when the bare facts are called to attention. It is with great gratification that the ANNALS reproduces the following comments on this anniversary from the *Boston Medical and Surgical Journal* of July 31, 1913. Perhaps this hint from afar was needed to stimulate local knowledge of the laboratory and zeal to promote its work.

"The Bender Laboratory of Albany, N. Y., has recently celebrated its eighteenth anniversary by appropriate exercises of a simple sort. The chief event of these exercises was a speech by Dr. Abraham Jacobi, now in his eighty-fourth year, who dwelt on the progress which had been made in the work of the laboratory since its dedication in 1896, when he delivered the dedicatory address. Remarks were also made informally by Dr. George Blumer of the Yale Medical School and formerly of Albany, who spoke of the early days of the laboratory and of the somewhat primitive methods of its work. Dr. R. M. Pearce, formerly of the Harvard Medical School, director of the Bender Laboratory from 1903 to 1908, now professor of Research Medicine at the University of Pennsylvania, told of the benefit which the laboratory had been to the city and State, as well as an important agent in the education of students. Dr. S. B. Wolbach and Dr. Thomas Ordway, both at present members of the Harvard Medical Faculty, spoke of the practical usefulness of the laboratory, with which each had for short periods been associated as directors. The present director, Dr. H. S. Bernstein, gave an account of the work now being done in connection with the laboratory, and showed in convincing fashion the extraordinary utility of such an institution as a teaching center, as a means of conserving the public health,

as a help in the practice of medicine and as a training school for research students.

"The success of this laboratory in a city of moderate size should be a stimulus to other communities in establishing similar facilities for the study of disease and the general dissemination of medical knowledge. With the increasing necessity for, the use of accurate laboratory methods in diagnosis, it is becoming increasingly apparent that if the welfare of the people is to be completely subserved means for making the necessary clinical and laboratory tests should be supplied relatively near at hand. Each State should unquestionably be provided with laboratories for the determination of all ordinary tests, rather than place physicians under the necessity of sending specimens and material of various sorts to distant cities or other States for purposes of diagnosis. In the present state of the syphilis question this is particularly important in relation to the Wasserman reaction. The evidence is strong that this test is of the greatest possible value in the determination of the infection and it is equally evident that, to be reliable, the test should be performed by sero-technicians, who have both the time and the experience necessary. There are, however, still certain States boasting much progressiveness in which this test cannot be satisfactorily made. The need of the future in this regard is apparent, and the far-reaching usefulness of the Bender Laboratory in Albany to the physicians and people in that part of the State, should, as we have suggested above, prove an incentive to the building and maintenance of similar institutions in many cities of the country which are now dependent upon outside aid for the services which such laboratories should render."

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, JULY, 1913.

Deaths.

Consumption	18
Typhoid fever	0
Scarlet fever	1
Measles.	0

Whooping-cough		1
Diphtheria and croup		2
Gripe		0
Diarrheal diseases		18
Pneumonia		5
Broncho-pneumonia		0
Bright's disease		22
Apoplexy		5
Cancer		9
Accidents and violence		16
Deaths over 70 years		29
Deaths under 1 year		29
Total deaths		167
Death rate		19.65
Death rate less non-residents		16.24

Deaths in Institutions.

	Resident	Non-Resident
Albany Hospital	13	8
Albany County Jail	0	1
Child's Hospital	0	0
County House	2	3
Home for the Friendless	1	0
Homeopathic Hospital	2	1
Hospital for Incurables	0	0
Little Sisters of the Poor	1	0
Penitentiary	1	0
Public places	3	3
St. Margaret's House	1	3
St. Peter's Hospital	11	3
Austin Maternity Hospital	1	1
Albany Hospital, Tuberculosis Pavilion	3	4
Labor Pavilion	1	0
Sacred Heart Convent	1	0
Totals	41	27
Births		171
Still Births		9
Premature Births		4

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive		12
Negative		14
Total		26
Living cases on record July 1, 1913		304

Cases reported:

By card	26
Dead cases by certificate.....	4
	—
Total	30
Dead cases previously reported.....	14
Dead cases not previously reported.....	4
Removed.	5
Recovered.	1
	—
Living cases on record August 1, 1913.....	310
Total tuberculosis death certificates filed during July.....	18
Out of town cases dying in Albany:	
Albany Hospital Camp.....	4
	—
City tuberculosis deaths.....	14

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	38
Number of cases assigned.....	10
	—
Total.	48
Disposition of old and new cases:	
Died.	4
Hospital.	9
Left city	5
Remaining under treatment.....	30
	—
Total.	48
Number of visits made.....	183

BUREAU OF PATHOLOGY.*Bender Laboratory Report on Diphtheria.*

Initial positive.	8
Initial negative.	164
Release positive.	7
Release negative.	23
Failed.	15
	—
Total.	217

Test of Sputum for Tuberculosis.

Initial positive	10
Initial negative	15
	—
Total.	25

BUREAU OF MARKETS AND MILK.

Market inspections	129
Public market inspections.....	24
Fish market inspections.....	5
Slaughter house inspections.....	3
Packing house inspections.....	4
Hide house inspections.....	4
Rendering plant inspections.....	2
Milk depots inspected.....	10
Milk depots reinspected.....	20
Milk wagons inspected.....	91
Wagons in clean condition.....	89
Wagons in unclean condition.....	2
Milk tests	91
Milk below standard.....	0
Milk above standard.....	91
Chemical analysis of milk.....	2
Chemical analysis negative.....	2

MISCELLANEOUS.

Mercantile certificates issued to children.....	12
Factory certificates issued to children.....	23
Children's birth records on file.....	35
Number of written complaints of nuisances.....	60
Privy vaults	5
Closets.	5
Plumbing.	13
Other miscellaneous complaints.....	37
Cases assigned to health physicians.....	31
Calls made	70
Number of dead animals removed.....	789

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK.—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR JULY, 1913.—Number of new cases, 201: classified as follows: Dispensary patients receiving home care, 50; district cases reported by health physicians, 5; charity cases reported by other physicians, 44; moderate income patients, 81; metropolitan patients, 21; old cases still under treatment, 88; total number of cases under nursing care during month, 289. Classification of diseases for the new cases: Medical, 70; surgical, 10; gynecological, 5; obstetrical under professional care, mothers 41, infants 39; eye and ear, 1; infectious diseases in the

medical list, 35. Disposition: Removed to hospitals, 21; deaths, 10; discharged cured, 86; improved, 57; unimproved, 14; number of patients still remaining under care, 101.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 3; nurses in attendance, 3; patients carried over from last month, 0; new patients during month, 3; patients discharged, 3; visits by head obstetrician, 0; visits by attending obstetrician, 0; visits by students, 23; visits by nurses, 29; total number of visits for this department, 52.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,231; for professional supervision of convalescents, 544; total number of visits, 1,775; cases reported to the Guild by three health physicians, and 46 other physicians; graduate nurses 8 and pupil nurses 5 on duty.

Dispensary Report.—Number of clinics held, 82; new patients, 126; old patients, 304; total number of patients treated during month, 430. Classification of clinics held: Surgical, 11; nose and throat, 7; eye and ear, 16; skin and genito-urinary, 5; medical, 10; lung, 8; dental, 0; nervous, 1; stomach, 2; children, 13; gynecological, 9.

INVESTIGATING SUMMER RESORTS.—Inspectors of the State Health Department are making a tour of the hotels, summer camps, etc., in the Adirondacks, with a view of ascertaining their sanitary condition and environment. Attention is directed principally to those places whose sanitary condition has previously been criticized.

SAFETY EXPOSITION.—The First International Exposition of Safety ever held in America will be held in New York from December 11th to 20th, 1913. The exposition will be unlimited in its scope, embracing everything devoted to safety, health sanitation, accident prevention and the advancement of the science of industry.

SUFFOLK COUNTY TUBERCULOSIS HOSPITAL.—The Board of Supervisors of Suffolk County voted to buy a site at Holtsville for the establishment of a tuberculosis hospital. While no appropriation was made for construction, the actual acquisition of the site by the county for this purpose undoubtedly means that the tubercular patients in Suffolk County are soon to be provided for.

CHAUTAUQUA COUNTY HOSPITAL.—Mrs. Elizabeth M. Newton, of Fredonia, Chautauqua County, left \$150,000 for a tuberculosis hospital. Trustees of the fund are negotiating with the Board of Supervisors of Chautauqua County, to the end that the institution may be practically the Chautauqua County Tuberculosis Hospital. While the efforts of those most active in the tuberculosis movement have been directed toward securing the establishment of public institutions, supported by public funds, a very considerable number of substantial gifts have

resulted directly or indirectly from this movement. With no concerted effort to secure them, it is significant of the interest that has been aroused that so many people have come forward to prefer substantia-

lial aid.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS.—The twenty-third annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, on Wednesday, October 22, 1913. A very interesting and attractive program has been arranged. Dr. Hugh M. Young of Baltimore will deliver the "Address in Surgery." Railway surgeons, attorneys and officials and all members of the medical profession are cordially invited to attend.

DEPARTMENT OF AGRICULTURE ADVISES THAT MILK BE PASTEURIZED AT LOW TEMPERATURE.—In order to determine the best way of pasteurizing milk so as to kill the disease germs and yet not give the milk a cooked flavor or lessen its nutritive value, the Department of Agriculture, through its Dairy Division, has been conducting a series of experiments, treating milk at different temperatures and for different lengths of time. According to the report on these experiments when milk is pasteurized at 145 degrees F. for thirty minutes the chemical changes are so slight that it is unlikely that the protein (muscle building element) or the phosphates of lime and magnesia are rendered less digestible than they are in raw milk.

Moreover, from a bacteriological standpoint, pasteurizing at low temperatures is found to be more satisfactory than pasteurizing at high temperatures. According to experiments where low temperatures are used the majority of bacteria that survive are lactic acid organisms which play an important part in the normal souring of milk. When milk is efficiently pasteurized at high temperatures, the bacteria which survive are largely of the putrefactive kinds and milk so treated if kept for any length of time has a tendency to rot instead of sour. From the standpoint of economy, the technologist of the Dairy Division finds that pasteurizing at low temperatures calls for less heat. It is found that it takes about 23½ per cent less heat to raise milk to the temperature of 145 degrees F. than to a temperature of 165 degrees F. A similar gain is a saving of the ice needed because it will require 23½ per cent more refrigeration to cool milk to the shipping point when it is pasteurized at the higher temperature. The Department, therefore, recommends that "When market milk is pasteurized it should be heated to about 145 degrees F. and held at the temperature for thirty minutes."

MENTAL HYGIENE CLINICS FOR EARLY CASES OF NERVOUS AND MENTAL DISEASES.—Mental hygienic clinics for early cases of nervous and mental diseases are held on Friday of each week, at 2 p. m. at the Long Island

College Hospital, Brooklyn. Doctors E. M. Somers and Dr. William Browning conduct the clinics.

Dr. E. M. Somers is in charge of the Mental Hygiene Clinic held at the Long Island State Hospital, Brooklyn, Saturday of each week from 10 A. M. to 2 P. M.

EXAMINATION FOR LICENSE AS ASSISTANT DIRECTOR OF EDUCATIONAL HYGIENE.—An examination for applicants for license as Assistant Director of Educational Hygiene in the schools of the city of New York will be conducted by the Board of Examiners on Monday, September 29, 1913, at 9 A. M. at the Hall of the Board of Education, Park Avenue and 59th Street, Manhattan. An oral examination of such applicants will be held later at the call of the Board of Examiners.

Applicants must present evidence of good moral character and must have the qualifications described under (a) and (b) following. No applicant will be admitted to this examination who will not have accomplished the required experience before September 29, 1913.

(a) Graduation from a medical school recognized by the Regents of the University of the State of New York. (b) One year of specialized experience in pediatrics.

Scope of Examination. Written examination.—The practice of medicine in all of its branches with particular reference to disease or disability which may occur during school life. Emphasis will be placed upon pediatrics and upon the hygiene of the teacher. The examination will include such topics as school hygiene and sanitation, the processes of growth and development with particular reference to school life, tests of mental and physical health and efficiency.

An oral examination will be held at the call of the Board of Examiners. This will consist of an oral quiz, an examination on physical diagnosis and clinical tests which will be held at a clinic to be designated by the Board of Examiners, and in addition, candidates will be taken to a public school for a conference quiz on school hygiene, school sanitation, and hygiene of the pupil and teacher.

The applicants should file at the time of the examination all evidence of eligibility, properly certified and should file all pamphlets and publications which contain original matter written by the candidate on topics which come within the scope of the examination.

Applicants for license as Assistant Director of Educational Hygiene must present evidence of sound physical health in the form of a certificate to be issued by one of the physicians of the Board of Education.

The license issued under these regulations holds for one year from date of appointment, and may be renewed for two successive years, in case the work of the holder is satisfactory, without examination. At the end of the third year of continuous successful service the New York City Superintendent may make the license permanent. Under section 1089 of the City Charter, as amended in 1912, an eligible list

of licenses as assistant director of educational hygiene continues in force for three years.

The present salary schedule of assistant directors of educational hygiene is as follows: First year, \$2,500; an annual increase of \$100 until the maximum of \$3,000 is reached which shall be the salary for the sixth and for succeeding years.

PERSONAL—Dr. WALTER S. LILIENTHAL (A. M. C. '10), has removed from 38 Grand Street to 349-B. Madison Avenue.

—Dr. ALTON B. DALEY (A. M. C. '12), is practicing at Athens, N. Y.

DIED.—Dr. WALTER C. GILDAY (A. M. C. '94), a member of the American Medical Association and New York Academy of Medicine; lecturer on surgery in the New York Polyclinic Medical School; attending surgeon to St. Elizabeth's French and Polyclinic hospitals; died at his home in New York City, May 31, from acute gastritis, following ptomain poisoning, aged 42.

Current Medical Literature

SURGERY

Edited by Albert Vander Veer, M. D., and Arthur W. Elting, M. D.
Osteomyelitis of the Long Bones. A Study of Ninety-Four Cases from the Children's Hospital, Boston.

JOHN HOMANS. *Annals of Surgery*, Volume 55, No. 3, March, 1912.

The author bases the material for this paper upon those cases treated at the Children's Hospital in Boston since 1904, and has largely been confirmatory of Nichol's work. His purpose has been to determine and illustrate the manner in which infection attacks different bones, the variations in the course and virulence of the disease, the value of the Rontgen ray in diagnosis and treatment, and, finally, the results of the treatment itself.

Homans found in going over a long series of cases that the first evidence of disease has appeared at one end or the other of the infected bone. In other words, the history has generally shown that it was not the thigh, leg, arm, or forearm, which first became painful, swollen, and tender, but the hip, knee, ankle, shoulder, elbow or wrist. In most of the instances in which the history has failed to give evidence upon this point, the Rontgen plates have supplied the lack by identifying the original focus of infection.

Variations in the course and severity of the disease are well illustrated in the author's series. In some instances a mild attack has never required

operation, and the only evidence of its passage has been a slight alteration in the bone, as shown by the Rontgen ray. In others the onset has extended over months and the cure required a very minor operation. In such cases the diagnosis of rheumatism or tuberculosis is often made.

The author regards the X Ray as a very valuable aid in the diagnosis and treatment of osteomyelitis, but he observes that its use is subject to one very important limitation. It appears to be a fact that according to the greater or less rapid destruction of bone in any one case, the Rontgen plate may lag more or less behind in revealing the full amount of damage.

With regard to the results, the author summarizes them as follows: There were 94 cases in the series studied.

Seven died as an immediate effect of the disease.

Forty are alive and well and have a perfect functional result. Of these, three had multiple infections.

Nine are stated in the Out-Patient records to be healed and in good condition, but have not been seen since.

Eleven have healed wounds but some deformity which in no case is disabling.

Seven have unhealed wounds.

Twenty have not been heard from since leaving the hospital.

CONCLUSIONS.

1. Osteomyelitis of the long bones in children originates in the ends of the diaphyses—rarely as a periostitis.
2. It principally attacks the weight-bearing bones.
3. The early or primary operation demands the removal of bone for purposes of drainage only. The infected medulla should be fully uncovered without doing unnecessary damage to the periosteum or endosteum.
4. Considering the power of regeneration of periosteum plus endosteum, early complete resection of a shaft is not advisable; therefore total resection later should be reserved for cases of total necrosis.
5. The Rontgen ray cannot be depended on for diagnosis in the very early stages, but is invaluable in following the course of the disease.

MATERIA MEDICA AND THERAPEUTICS

Edited by Spencer L. Dawes, M. D.

Some Observations on the Physiological Action of Sodium Chloride.

DON R. JOSEPH and S. J. MELTZER. *The Journal of Pharmacology and Experimental Therapeutics*, March, 1911.

Some time in the middle of the last century, Koelliker and others made the observation that nerve and muscle preserve their irritability and appearance for many hours in a solution of sodium chloride of a concentration ranging between 0.5 per cent and 1 per cent, and from

that time sodium chloride in 0.5 per cent solution was considered as an *indifferent* solution. Later, however, the observations of Nasse on the concentrations of various salts led to the adoption of 0.6 per cent for this salt instead of 0.5 per cent, and Hermann designated this solution as "physiological water." It was soon determined that transfusions with this solution are capable of saving the life of animals and man, endangered by profuse hemorrhage and the term physiological salt solution became popular. At the end of the eighties it was decided that the solution to be "indifferent" had to be isotonic with the serum of the blood and at the same time it was recognized that 0.6 per cent was only isotonic with the serum of the frog and was therefore "indifferent" or "physiological" only for the tissues of this animal. It was also observed that the isotonic solution for mammals requires a much larger concentration and physiologists now employ generally solutions ranging in concentration between 0.9 per cent and 1.0 equally for all kinds of higher animals, although in medical practice we still meet quite often the "normal saline" of 0.6 per cent.

When a solution is isotonic with the serum of an animal it is indifferent to its tissues because it then neither gives nor takes up fluid to or from these tissues and this implies that sodium chloride acts on the tissues by the physiological property of osmosis only; that chemically it is indifferent. Experiments of Kronecker and Stirling, Ringer, Locke and Carstairs showed, however, the incorrectness of this view and that a salt solution which is from the physical, osmotic point, indifferent, is capable of exerting abnormal influences in several directions which can be corrected by the addition to the solution of small amounts of calcium, and Howell stated in 1899 that "sodium chloride seems to be essential only in preserving the osmotic relations between the tissues and the surrounding liquid." The experiments of Loeb with the Fundulus, a marine fish, in which he showed that while it can live in distilled water it dies in a pure solution of sodium chloride and that the addition of calcium deprives it of its poisonous influence indicates that the harmfulness must be due to some chemical action of sodium chloride which can be neutralized by calcium. Therefore, in the opinion of Joseph and Meltzer, the assumption is permissible that the injuries to tissues are due to direct chemical action by sodium chloride and that the addition of calcium does not merely supply a deficiency but acts as a neutralizing agent.

In previous studies upon the comparative toxicity of the chlorides, the writers arrived at the conclusion that the toxicity of magnesium, calcium, potassium and sodium for any living tissue stands in inverse proportion to the amounts in which these ions are present in the lymph surrounding these tissues. The ion which is represented in the lymph in the smallest amount is most poisonous and the one which is represented in the largest amount is the least poisonous. From this it would follow that an ion begins to exert an abnormal or toxic action on a living tissue as soon as it is present in the bathing medium in a quantity which

exceeds that in which it is present in the normal blood and lymph of that tissue.

It is known, however, that fairly large doses of sodium chloride can be injected intravenously into dogs without producing any definite untoward symptoms. Assuming even that a part of the injected salt is rapidly eliminated again, there must remain in the blood for some time an excess of it, large enough to be deleterious to the vital tissues through which it circulates, and it is probably the presence in the blood of calcium (and potassium) which neutralizes the excess of sodium and inhibits its deleterious influence. But when strongly hypertonic solutions are injected in very large amounts a period is reached when tremors and twitchings set in, convulsions follow terminating in paralysis and death, a condition designated by pharmacologists as *salt action*, meaning the withdrawal of water from the tissues by salt.

The present paper is based upon a series of experiments made upon twenty-six dogs and from these experiments they draw conclusions which contradict their former belief that the twitchings and convulsions might be due to a curare-like action of the sodium chloride upon the respiratory motor nerves.

The lesson for the clinician in the paper, which has of course been much condensed, is that his salt solution should be isotonic and that it requires the addition of calcium to make it safe and truly physiological.

Induced Pneumothorax in the Treatment of Pulmonary Disease.

Louis HAMMAN and MARTIN F. SLOAN. *Bulletin of the Johns Hopkins Hospital*, February, 1913, Vol. XXIV, No. 264, page 53.

The authors assert that the application of induced pneumothorax should not be restricted to any particular disease or type of case. It has been made use of chiefly in pulmonary tuberculosis, but numerous instances are recorded where patients with bronchiectasis and chronic non-tuberculous infections of the lungs have been similarly treated. The authors' experience has been gathered from unfavorable and desperate cases of pulmonary tuberculosis. Many of the patients they operated upon at first were not selected in any medical sense. They were accepted because, conscious of their progressing disease, they were willing to risk a new method of treatment, while more suitable patients withheld their consent. Recently they have induced pneumothorax under more favorable conditions and they express the hope that in the future the opportunity may present itself to test its value in earlier stages of the disease. They outline in this article various methods of inducing pneumothorax, including Bauer's, Murphy's and Forlanina's, and also the method devised by themselves, which is in reality a modification of Bauer's. The apparatus which they use is also described in detail. The method consists briefly in introducing into the pleural sac through a needle air or nitrogen gas.

Since all the cases reported by the authors were suffering from moderate

rately or far advanced pulmonary tuberculosis, it clearly would be futile to gauge the value of pneumothorax treatment by classifying them according to the stage of the disease. A just estimate of the value of the treatment, it seems, can only be gained by a study of the individual cases. However, some general grouping is desirable, therefore the authors divide the cases according to the success attending their efforts to produce collapse of the diseased lung. They arrange them in four groups:

1. In three cases induction of pneumothorax was followed by death or a serious complication.
2. In three cases it was impossible to produce pneumothorax.
3. In seven cases only a partial pneumothorax was produced.
4. In seven cases a complete pneumothorax was produced.

In all of the cases in Group 4 the induction of pneumothorax was followed by diminution of cough and expectoration. Six of the seven cases had suffered from hemoptysis of varying grade, which did not recur after the pneumothorax was complete. All of the patients showed marked improvement in their general condition except one. This case lost considerable weight but was otherwise well. From an exhaustive study of the literature and the observations of the work of the authors upon this important subject, they seem justified in drawing the following conclusions:

1. Induced pneumothorax is a harmless procedure and the operation, carefully performed, is without danger.
2. In three out of twenty cases it was impossible to produce any pulmonary collapse owing to general pleural adhesions.
3. The pneumothorax has, in most instances, an immediate and striking influence upon the cough and expectoration. Tubercle bacilli may disappear from the sputum.
4. Constitutional symptoms abate more slowly. In most instances there is at first a loss in weight followed by a gradual rise.
5. The total collapse of one lung causes surprisingly little inconvenience. Usually there is but slight dyspnea on exertion. Many of the patients with an induced pneumothorax assist actively in the work about the sanatorium.
6. The procedure is of great value in the treatment of pulmonary hemorrhage.
7. While induced pneumothorax will never become a routine method for the treatment of pulmonary tuberculosis, still in selected cases it offers a prospect of temporary and permanent relief when the usual methods of treatment have been unsuccessfully tried. Quiescent lesions in one lung with acute recrudescence in the other are the most favorable for the treatment. Its use need by no means be limited to strictly unilateral lesions, but when there is advanced disease of both lungs little benefit can be expected. It would seem advisable not to withhold the treatment until the patient is hopelessly advanced, but to apply it judiciously to suitable moderately advanced patients in whom the disease tends to progress in spite of appropriate treatment.

*A Note on the Treatment of Erysipelas.*F. S. ARNOLD. *The Practitioner*, May, 1913, p 900.

The article in the March number of *The Practitioner* on erysipelas (q. v.) suggests to Arnold a recital of his experiences in that disease with buttermilk as a therapeutic agent. He gives histories of two cases in which it was used and states that he has used that remedy for seventeen years with invariable success. The buttermilk is freely applied to the inflamed areas on gauze or old linen and it is administered freely by the mouth. A rapid fall of temperature follows with surprising promptness and if the gauze is kept constantly wet the inflammation is practically aborted within twenty-four hours. Similar results occurred no matter what the stage of the disease when treatment commenced.

The author makes no attempt to give a reason for the remarkable results which he recites but asks "whether the undoubted abortive power of the buttermilk is due to the presence of beneficent micro-organisms therein, to the antiseptic action of its lactic acid, or, perhaps, to the two combined?"

OPHTHALMOLOGY

Edited by Charles M. Culver, M. D.

*Contributions to the Study of Glaucoma.. (Beitraege sur Lehre von Glaukom.)*W. GIBBERT. *v. Graefe's Archiv fuer Ophthalmologie*, Vol. LXXXII, Part 3.

This article is based on observations made with the Schioetz tonometer. From recorded statistics at his clinic in Munich, the author estimates that, among 71 cases of glaucoma simplex, about 62% were emmetropic or myopic; whereas, in 115 cases of inflammatory glaucoma, about 77% were hyperopic, about half the others being emmetropic and an equal number myopic. From these data he concludes that the clinical form of the glaucoma is largely determined by the shape of the eye, as shown by its refraction.

Gibbert finds the general blood-pressure so nearly uniformly raised, in patients having glaucoma that, when it is not present he is reluctant to diagnosticate glaucoma. He thinks that glaucoma originates in disease of the general and ocular blood-vessels and that its clinical form depends on the size of the eye and of the lens. He insists that simple and inflammatory glaucoma are varieties of the same disease. Among twenty cases of simple glaucoma, only seven had blood-pressure higher than 200; whereas, among twenty cases of inflammatory glaucoma, there were fifteen having a blood-pressure higher than that. In eyes that are but slightly hyperopic or not at all so, high blood-pressure may be accompanied by but slightly increased intraocular tension; but, on the

other hand, a higher tension may develop, with comparatively low blood-pressure, where arteriosclerosis is present.

In his discussion of the treatment, Dyes' blood-letting, which is extensively employed in Everbusch's clinic, is favorably mentioned; the value of it he holds to be shown, by experience, in three sets of conditions: (1) in the prodromal stage; (2) in glaucoma simplex when for whatever reason operation is contraindicated or when the glaucoma is still progressive, in which, latter case the bleeding should be done periodically, perhaps twice a year; (3) before operation.

The article includes tabular comparison of general blood-pressure and intraocular tension. This was based on measurements made by himself in ten cases of glaucoma; from them he concludes that such pressure and tension increase and decrease somewhat proportionately. The lessening of both lasted, usually, only three or four days but in some cases it was of three weeks' duration.

He holds that the miotic which reduces intraocular tension most quickly and effects the greatest amount of reduction, is two milligrams of fresh, powdered, Merck's pilocarpin, followed, eight minute later, by five milligrams of dionin, the canaliculi being occluded, by compression, during all of this time. He condemns subconjunctival injections, of sodium citrat and the like, holding that the trauma of them raises the intraocular tension more than the drug lessens it.

SURGICAL PATHOLOGY

Edited by George E. Beilby, M. D.

The Wassermann Reaction in the Johns Hopkins Hospital.

RALPH H. MAJOR. *Bulletin of the Johns Hopkins Hospital, Vol. XXIV,*
No. 268, June, 1913.

The Wassermann reaction, as Major states, has been extensively employed in the Johns Hopkins Hospital in the past four years, and their experience with it confirms the result of a host of workers as to its reliability and specificity as a diagnostic procedure. The first report upon its use in that clinic was made in 1910, and the present report includes cases from September, 1911, to August, 1912, in which the reaction was employed in all upon 1,200 patients, the great majority of whom were medical cases. This number includes a great variety of diseases ranging from outspoken cases of syphilis to neurasthenic patients, in whom reaction was done for the purpose of excluding lues. The series also includes a great variety of functional and organic nervous diseases, cardiac diseases, nephritis, diabetes, pneumonia, typhoid fever and gastro-intestinal diseases, and a fairly large number of cases of brain tumor.

Of these 1,200 cases, 239, or 20%, gave positive reactions; while 961, or 80%, were negative. Of the cases giving positive reactions, 55, or

24% (nearly $\frac{1}{4}$) gave no history of a primary sore. The percentage of negroes in the above figures is of some interest. The Wassermann reaction was performed upon 185 negro patients, the great majority being cardiac or cardio-renal cases, but also including numerous other more uncommon diseases. Of this number, 61, or approximately 34%, gave positive reactions, while 124, or 66%, were negative. When this number is compared with the reactions on white patients, it is seen that 34% of negroes compared with 17% of whites, give a positive reaction. This indicates a frequency of positive reactions in negroes twice that of the whites. These figures do not perhaps give a sufficient indication of the greater frequency among negroes, since the total number of reactions performed on the sera of colored patients is considerably less than that on whites.

The Wassermann reaction in 42 cases of aortic insufficiency showed 21, or 50%, positive reactions; while 21 were negative. Of the 21 negative cases, all but six gave a history of rheumatic fever, four of the six showed marked arterio-sclerosis, and one patient included in the six died of an acute aortic endocarditis.

The reaction was applied in 22 cases of aneurysm, mostly of the aortic arch. Twenty-one, or 95%, gave positive reactions. The patient who gave a negative reaction was a negro who had a definite history of syphilis seven years before. His serum was tested one month later after antiluetic treatment, and with the same result.

In 17 cases of tabes the Wassermann reaction showed 11, or 64%, positive and 6 negative. Three of these patients gave a negative Wassermann in the serum, while the cerebro-spinal fluid was positive; and three of the patients having positive reactions with their serum showed negative reactions in the cerebro-spinal fluid. Eight of the patients admitted luetic infection; 9 gave no history.

Thirteen cases of general paresis were tested. Twelve, or 92%, of this number were positive. The cerebro-spinal fluid was positive in every case examined (seven), while the blood was negative in seven cases. Nine of the 13 gave a luetic history.

The Wassermann reaction was done with the serum of 59 cases, of various types of brain tumors, including gliomata, hypophyseal tumors and cysts, cerebellar tumors and cysts, and tumors of the spinal cord, all giving negative results. In seven of these cases the test was also negative with the cerebro-spinal fluid.

The author summarizes his study as follows: "The past year's experience with the Wassermann reaction in this clinic confirms our faith in the reliability and specificity of this reaction. The only other diseases in which positive reactions have been reported (trypanosomiasis, yaws, scarlet fever, leprosy, and possibly malaria) are either so easily diagnosed or so uncommon here as to cause no confusion."

Wassermann states that he and his assistants have performed over 10,000 examinations and never yet made a false diagnosis. While the number of patients in our series is much smaller, we feel that we have

not made a false diagnosis the past year when the diagnosis of syphilis was placed after the names of 239 patients who showed a positive Wassermann reaction.

Hypersensitiveness to Tuberculo-Protein and to Tuberculin.

CHARLES R. AUSTRIAN. *Bulletin of the Johns Hopkins Hospital, May, 1913, Vol. XXIV, No. 267.*

A great deal has been published concerning hypersensitiveness to bacterial proteins, and from the data in the literature several facts seem established: Animals can be actively sensitized with dead bacteria, or with the extracts of them. The hypersensitive state is transmitted from mother to young. A refractory state is readily induced, and, in general, sensitization due to bacterial proteins obeys the same laws as does sensitization due to any other protein. Further, the symptoms resulting when a sensitized guinea pig is given an intoxicating dose of the homologous bacterial protein are in kind the same as those seen in hypersensitiveness to serum.

However, striking as is the similarity of the phenomena developing after sensitization with serum, and with proteins of bacterial origin, one apparent difference is to be noted. The injection of horse serum into a series of guinea pigs leads to the development of a state in which the animal is so sensitive that a second dose, properly administered, causes, in the majority of instances, acute lethal shock, whereas experiments published concerning hypersensitiveness to bacterial proteins give the impression that sensitization here is much less constant and much less intense.

The author then cites a few of the more important articles on this phase of the subject which actually illustrate these points, and then using several strains of tubercle bacilli of the human type, he carries on a series of experiments on animals, which clearly demonstrate that preliminary treatment of guinea pigs with "O. T. Protein," "A. F. Protein" or with "Tuberculo-Protein" causes the development of hypersensitiveness to "A. F. Protein" and to "Tuberculo-Protein."

This, the author states, is sufficient evidence to prove the general assumption concerning the identity of the essential protein of tuberculin used to demonstrate the reaction in man, with the tuberculo-protein shown to produce classical hypersensitiveness in animals. The demonstration of this fact justifies the application of the data obtained in the experiments on animals with tuberculo-protein to the interpretation of the phenomenon known as the tuberculin reaction.

Wolff-Eisner, v. Pirquet, Baldwin, Krause, Hamman and Wolman, and many others regard this phenomenon as a manifestation of hypersensitiveness to tuberculin. For this view the presumptive evidence is strong. The facts which support this hypothesis may be briefly summarized as follows:

All the manifestations of typical hypersensitiveness to protein can be produced in guinea pigs by treatment with aqueous extracts of tubercle bacilli. Guinea pigs can be sensitized with albumose-free tuberculin and with old tuberculin that has been freed of glycerin and made poor in salts. And sensitization with any of these products causes the animal to react to injections of the others.

Hypersensitiveness to tuberculin develops within 7 to 15 days after infection with the *B. tuberculosis*.

Tuberculous animals can occasionally be intoxicated with tuberculo-protein, developing symptoms of hypersensitiveness.

The passive transference of hypersensitiveness from a tuberculous man to normal guinea pigs has been successfully accomplished and positive results have likewise been obtained when the serum of a sensitized animal has been injected into an untreated one.

The type of the reaction symptoms and the development of them in an infected host after the administration of minimum doses of tuberculin are likewise suggestive facts.

This evidence justified the interpretation of the tuberculin reaction as a manifestation of true hypersensitiveness.

Endothelioma of Lymph Nodes.

JAMES EWING. *Journal of Medical Research*, Vol. XXVIII, No. 1, May, 1913.

Ewing states that for many years he has been encountering tumors of lymph nodes in subject presenting no other demonstrable tumor and with whom the subsequent course indicated that no other tumor existed, and in which the structure strongly suggested an endothelial origin. The observation of several tumors of this class within the past year which presented early states and transitional forms between those previously observed has led him to the conclusion that endothelioma of lymph nodes is a rather common neoplasm, that it is usually classed with lymphosarcoma on the one hand and with secondary carcinoma on the other, that the process differs in many histological, anatomical and clinical features from secondary carcinoma, and that it is usually possible to recognize these features with considerable or complete certainty.

The author reports 11 cases in support of his contention. These cases comprise clinically a great variety of diagnoses, and upon a study of them he bases the following conclusions:

Extreme grades of endothelial hyperplasia are not infrequently associated with and dependent upon granulomatous infection of lymph nodes, and these cases demonstrate the capacity of endothelium to respond to inflammatory irritation with extensive proliferation.

In some cases it is difficult or impossible to determine whether this overgrowth is simply inflammatory or independent of the irritant, autonomous, and neoplastic.

The long continued effects of a granulomatous infection may lead to neoplastic growth of lymphatic endothelium, and in the course of a granulomatous infection of lymph nodes, after repeated operations, the granulomatous element may be eliminated and the disease progress as a form of neoplasm.

Granulomatous infection of lymph nodes may very early give rise to excessive overgrowth of endothelium of distinctly anaplastic type, and with local aggressive properties.

Such malignant endotheliomas may arise without any evidences of an associated granuloma. It is possible to conceive that an original infectious focus may be overgrown and obscured by the neoplastic cells. No definite evidence of such an event has been secured, but it has been shown that one node of a chain may exhibit purely neoplastic overgrowth while others show chiefly granuloma.

Certain endotheliomas of lymph nodes designated as diffuse, plexiform, perivascular, or alveolar, are probably derived from the endothelium of lymph sinuses and lymph cords.

Certain primary tumors of lymph nodes, with or without associated granuloma, are probably derived from the reticulum cells of the follicles. These tumors resemble lymphosarcoma with large cells, and may be distinguished from tumors of small lymphocytes.

Endothelioma of lymph nodes differs from other neoplasms in several particulars, and may be regarded as a disease *sui generis*, although, nevertheless, essentially neoplastic.

Excessive Thickening of Thiersch Grafts Caused by a Component of Scarlet Red (Amidoazotoluol).

JOHN STAIGE DAVIS. *Bulletin of the Johns Hopkins Hospital, Vol. XXIV, No. 268, June, 1913.*

In the first place, Davis states that he is fully convinced of the power of epithelial stimulation of certain of the organic coloring matters, namely, Scarlet Red, Soudan III, Azodolen, Pellidol, etc., when applied locally to granulating wounds. During the past four years a number of enthusiastic articles have been published by well known investigators on the satisfactory use of these substances. These papers almost uniformly report splendid clinical results in hastening the healing of sluggish granulating wounds of varying etiology, and in every situation.

The use of these coloring matters has also been objected to by some on the ground that there might be the possibility of producing epithelial overgrowths having malignant characteristics. Davis states that the consensus of opinion, deduced from experimental and clinical work, is that such danger is not great. However, he sounds a note of warning against the indiscriminate use of these substances by inexperienced persons, and he reports a case in which there was an overgrowth of epithelium following the use of amidoazotoluol in a case of ulcers following a burn in which Thiersch grafting had been employed. The

patient has been under observation for over two years and a half since his discharge from the hospital, and there is no sign of malignant degeneration anywhere. The skin, however, shows a distinct overgrowth of epithelium of a pebbly formation.

The Evolution of the Thyroid Gland.

DAVID MARINE. *Bulletin of the Johns Hopkins Hospital, May, 1913.*
Vol. XXIV, No. 267.

The thyroid while it does not play an essential rôle in our conception of vertebrates is, nevertheless, one of their most constant and characteristic structures—existing in the same anatomical form from the adult cyclostomes throughout all the fishes, amphibians, reptiles, birds and mammals. Marine shows that morphologically the endostyles are fundamentally identical in all. Cyclostomes, fishes, amphibians, reptiles, birds and mammals are the only classes of animals which possess ductless thyroids, the follicles of which are anatomically identical in all. The most important of the epithelia concerned in the formation of the ductless follicles is that form which is continuous with the lining epithelium of the duct and pharyngeal grooves. Studies in the embryology of the ductless thyroid have shown that in fishes, amphibians, reptiles and birds the thyroid arises solely from a median, single, ventral down-growth of the pharyngeal entoderm in or slightly anterior to the first aortic arch. In mammals this symmetry of development was believed to be departed from through the discovery by Stieda of the so-called "lateral thyroid anlagen" from the fourth or more accurately in man the rudimentary fifth gill pouch, but the work in the embryology, in the pathology and in the developmental defects of the thyroid during recent years has shown that these lateral bodies which in mammals only become imbedded in the lateral thyroid lobes takes no part in the formation of thyroid gland tissue. This solution of the origin of the mammalian thyroid from the single median anlage harmonizes the location and development of the endostyle with the location and development of the ductless thyroid. The thyroid mechanism therefore, irrespective of the possible phylogenetic relationship to the chordate stem of the several classes of animals concerned, appears to have been evolved through a direct line of descent from the Tunicates through the Aphi-oxus, fishes, amphibians, reptiles, birds and mammals. The meager evidence of the physiology in both the endostyle and the ductless thyroid gives no suggestion of an inter-relationship or function. Primarily the thyroid is a part of the alimentary tract and in its endostylar form is a digestive gland of great importance through its probable external secretion. In its ductless form it is only the atrophic remnant of its ancestor which, while it has suffered a corresponding distortion of function, still profoundly influences the animal's nutrition through the effect of its probable internal secretion.

The Physical Evidence of the Thymus.

CARL BASCH and ADOLPH ROHN. *American Journal of the Diseases of Children, February, 1912.*

As to the knowledge of the physical signs gained up to the present time, it may be said that there has been no infallible method of ascertaining the size and condition of the thymus gland. Recently it has been shown that extirpation of the thymus is followed by hyperexcitability of the nervous system to electricity, and by the checking of the growth of the bones and changes in their structure.

Blumenreich in 1900 determined the area of dullness by percussion and afterward by autopsy proved his outlines to be correct except for tongue-like processes or lobes which did not appear to view.

Successful attempts to obtain a thymus shadow by the Roentgen Rays were reported, but attempts to substantiate those findings made by the authors ended in absolute failure.

The authors' method aims at a refinement of the Blumenreich technic by means of muffled auscultation and very light percussion. The thymus is covered by the thick sternum and rests on the air filled trachea by which any jarring may change the percussion sound and the thymus edges are almost continuously covered by lung tissue. Basch constructed a small instrument consisting of a small plexor and pleximeter which can be worked with one hand while the stethoscope is held by the other. In addition to the auscultatory percussion the authors employed the so-called friction method for determining the borders of the thymus. This consists in placing a phonendoscope in the middle of the thymic area while a bristle brush is drawn diagonally over the sternal area and the point noted where the sound is deadened or lost.

More than 140 cases were examined and 1/10 of them confirmed by autopsy. The thymic area was outlined with reference to the suprasternal notch, the sternal borders and the ribs.

The greatest anatomical development of the thymus takes place between the sixth month and the third year. The author found the thymic dullness during this period of rhomboid form varying in size according to the age. The lower edge generally reached to the 2nd or 3d rib and commonly ran in an oblique direction. A clear full tone was found between the lower border of the thymus and the upper border of the heart.

The lateral borders correspond in general with the sternal line on the right and the parasternal line on the left.

Of the factors which may be mistaken for enlargement of the thymus, the lymph glands are the most important. Tuberculous changes in the lung also cause deception.

The authors conclude that systematic examination of 140 cases shows that the size of the thymus varies according to the age of the child and its nutritive condition, and to certain pathological conditions.

ALBANY MEDICAL ANNALS

Original Communications

THE ROLE OF INSECTS IN THE TRANSMISSION OF DISEASE.

A paper (illustrated with lantern slides) read by invitation before the Men's Club of All Saints Cathedral, Albany, N. Y., April 24, 1913.

By CHARLES K. WINNE, JR., A.B., M. D.,
Albany, N. Y.

The general subject of the relationship of insects to man is one of tremendous breadth and importance and involves in its full consideration a study of geography, history, finance, commerce, medicine in its many aspects, science in several other departments, and last but not least a subject about which we hear a great deal nowadays, conservation, conservation of energy and of resources. Volumes could be, and in fact have been, written upon it. In the short time at my disposal to-night I can but lightly touch upon but one small, but albeit very important, phase of the subject, that of the rôle of insects in the transmission of disease.

I know of no more fascinating subject, both historically and scientifically, than the study of tropical diseases and their dependence, partial in some cases absolute in others, upon insect life for their propagation and spread. I say tropical diseases for it is mainly in the spread of diseases of tropical and sub-tropical lands that, as far as our present knowledge goes, insects play their principal rôle. However, it is not exclusively in such diseases that insects play a very important part, as I shall later show you. Such a study is of course more interesting and more valuable to a medical man and to those engaged in the practical side of preventive medicine than to a body of laymen, but as the general public are taking an increased interest in med-

ical topics in general and in preventive medicine in particular, as indeed they should when they have so much at stake, and as so-called tropical diseases are becoming now much more prevalent in this country than formerly, owing to our more extended territory in the East and to our part in the development of the world's commerce by the construction of the Panama canal, I have taken this subject as that of my evening's talk.

Our actual knowledge of the part played by insects in the transmission of disease has practically all been acquired in the last 15 or 20 years and marks as brilliant and successful an epoch in the history of medicine as did the phenomenal development of bacteriology in the years just preceding. But just as any real advance in any line of progress is preceded by pathfinders and explorers, who are often unaware of the value of their own work, so the early and middle portion of the last century were marked by the expression of theories by various thinkers and workers that insects were directly concerned in the spread of certain diseases. These theories were based entirely upon the observation of related phenomena and not upon experimental evidence. I will later cite one or two examples of them.

One often hears the expression "There is nothing new under the sun," and the phrase is strongly brought to mind in considering this very late development in the history of medical progress when one reads in the writings of Ambroise Paré (1517-1590) a distinguished French military surgeon, often spoken of as "the father of military surgery," the following clear statement regarding a definite relationship existing between flies and disease as that of cause and effect. In describing some personal experiences after the battle of St. Quentin (1557) he relates that he found the wounds excessively fetid and full of worms with gangrene and corruption, and that it was necessary to give free play to the amputating knives in removing the decay by cutting off arms and legs. Later on he writes, in speaking about the battlefield, "For more than half a league around, the earth was covered with dead bodies, and we could hardly stop there on account of the terrible cadaverous odor which they exhaled, men as well as horses: we were, too, the cause of a rising up from the bodies of a great number of large flies gendered by the moisture of the bodies and the heat of the sun: they had

green and blue bellies and when they were in the air they cast a shadow on the sun. It was wonderful to hear them buzzing and wherever they settled they made the air pestilent and there they caused the pest."

Again in 1658 a distinguished natural philosopher, a Jesuit priest named Athanasius Kircher, in writing of the cause of a severe visitation of the plague, says, "Last of all flies according to Mercurialis, saturated with the juice of the dead or the diseased then visit neighboring houses and infect the food with their filth. In the late Neopolitan plague a hornet lit on the nose of a certain nobleman who was looking out of the window, and stung him, and in two days he was dead."

There are various ways in which insects act as carriers of disease: 1, Infectious material can be carried on their bodies or on their feet and legs and thus be deposited in wounds or abrasions of the skin or on foodstuffs or in milk, or may be ingested by the insect with its food and deposited with its excrement in similar locations, *e.g.*, flies. 2, So called "mechanical carriers." Biting or blood-sucking insects may absorb the infectious agent from the blood of an animal or man and mechanically transmit it to other animals or men when biting them without the infectious agent undergoing any change in its nature in the insect's body, *e.g.*, the transmission of plague by fleas. 3, So called "biological carriers." In this form, which is by far the most interesting, the insect as well as the higher animal acts as a true host for the infectious agent. Most of the diseases transmitted in this way are caused by animal parasites, usually protozoa. As a rule, they propagate asexually only in man or the higher animals, but develop sexual forms in insects, which thus become, zoologically considered, their true hosts, while man, if it be a human disease, is the intermediate host, *e.g.*, malaria and yellow fever and mosquitoes. Several of the diseases which are placed in this class for various reasons, are caused by at present unknown agents: yellow fever, dengue, typhus fever, etc. This type of transmission is perhaps the most important, as it renders the rôle of the insect necessary for the transmission of the given disease to the exclusion of all other methods of infection.

We will therefore begin our detailed study of the subject with this type of infection.

TEXAS CATTLE FEVER.

The first definite proof of the transmission of disease by insects was the demonstration by Smith and Kilborne (United States Department of Agriculture) in 1893 of the development of *Piroplasma bigeminum* and the part played by the cattle tick (*Boophilus bovis*) in the transmission of Texas cattle fever. These authors showed the presence of the parasites in the blood of infected cattle and in the ticks which fed upon them. They also showed that the ticks transmit the germ through their eggs to their progeny. The new generation of infected ticks then become attached to cattle, and by their bites infect them with the disease. They demonstrated that there could be no other mode of infection. The living tick is necessary for the transmission of the disease, and doubtless the parasite undergoes definite phases of its development in the body of the tick. This disease is not transmissible to man, but is of immense importance to the cattle raising industry. The great importance of this discovery, from our present point of view, is the encouragement it gave to the study of the transmission of human diseases by insect agencies. The connection between another species of tick and a disease of cattle in German East Africa caused by another species of *Piroplasma* has also been proved, as well as a similar relation in a disease of dogs. The same is probably true with related diseases in horses and sheep.

FILARIASIS

This disease, which is found in almost all tropical and subtropical countries and also to some extent in the southern part of this country, is due to an infection with a small worm about three or four inches long which is found in some of the deeper structures of the body. The embryo worms are only about $1/100$ th of an inch in length and are found in immense numbers in the blood of infected persons, but only at night, unless the person changes his habits of life and sleeps by day. Often there are no symptoms noted with an infection with this parasite but at other times there is an immense swelling of the legs, feet, and other parts of the body caused by an interference with the circulation. The disease has a special interest for our consideration as it was the first infection in which it was proved that a

parasite could be taken up into the body of an insect by the bite of the latter and there undergo further development. This work also especially paved the way for the discovery of the method of transmission of malaria and yellow fever.

The infecting worm had been known for many years but the mode of infection was entirely obscured until Sir Patrick Manson working in China in 1878 discovered experimentally that the larval forms are sucked up from the blood by mosquitoes. They then increase rapidly in size and become more highly organized, wander out from the stomach into the abdominal wall and thence into the thoracic (chest) muscles. At first Manson believed that at this stage of their development the mosquito died and the worms escaped into and infected water which would cause infection of man if it were used for drinking. Later however he proved a further advance of the embryo parasites into the proboscis of the insect where it became located in the sheath of that instrument to remain ready to escape into a new host when the mosquito bit a new victim. Various types of mosquitoes probably act as carriers of this disease. The disease has not been experimentally transmitted to man by the bites of infected insects, though a similar disease in dogs has been actually so transmitted.

MALARIA.

Of all the diseases which I will consider this evening the one in this class, transmitted by biological carriers, which has been studied the most thoroughly and the one the life history of whose parasitic agent we know the most about, both as to its life history in man and in the insect responsible for its transmission, is malaria. In its epidemiology it very closely resembles yellow fever and dengue, and in certain aspects of the subject it will be necessary to consider them together.

Malaria is for the most part a disease of warm or hot climates though the milder forms are common in parts of the Northern United States and in Northern Europe. With this limitation as to climate it is world-wide in its habitat. In the tropics, especially in Africa and India, it affects a very large proportion of the population, and in tropical Africa it is really one of the main causes of the difficulty with which the white race has been able to get a foot-hold. This statement applies equally well to other

tropical regions. In India in 1900 there were nearly 5,000,000 deaths from "fever," the vast bulk of which was undoubtedly malarial in origin, and of the military population of 306,000 there were over 102,000 cases of malaria admitted to the hospitals. These figures will give you some idea of the importance of this disease. It abounds especially in the lowlands along rivers and lakes, about marshy districts, and along the coasts, in short wherever there is water. It is rarely found in dry or elevated regions.

The parasitic theory of the disease is very old, probably B. C., and most of the theories along these lines recognised the fact that these unknown parasites were in some way connected with water, especially in swampy places. The infectious agent was supposed to originate in some way in the putrefactive processes which there abound, to rise in the air along with the gases which generate there, and to infect man by being inhaled. Indeed the name "mal-aria" clearly signifies the theory of its origin. This miasm was also supposed to be much worse in the evening and in the early morning. Similar theories were held in regard to the origin of yellow fever.

The organism which is now recognized as the cause of the disease was discovered by Laveran, a French army surgeon, working in Algeria in 1880. These parasites had been seen and described as early as 1847 and 1848 by both Meckel and Virchow, but their nature and importance was apparently not even suspected. They are not bacteria but are minute animal cells, sporozoa, which live in the blood of the infected individual, attacking the red blood cells, in the interior of which they develop, eventually destroying them. They occur in immense numbers in the blood and are, in single infections, all of the same age, and when at the period of maturity of the adult forms, the various individuals break up each into several smaller "young" forms, which in turn attack other red blood cells. This breaking up is called "sporulation" and corresponds exactly to the time of the chill and fever which is so characteristic of the disease.

Three theories as to the method of infection of man with these parasites were held: (1) Inhalation, (2) Ingestion with food or water, (3) Through the agency of insects. This latter theory became especially strong after the discovery of the methods of

infection with Texas cattle fever and filariasis. The theory of the insect origin of the miasmatic diseases is of long standing, but it was not until the early part of the 19th century that medical men directed their especial attention to the mosquito. You will recall what I said about "pathfinders." If the quotations I have given you from Paré and Kircher are not sufficient illustration, let me cite some further examples.

In 1848, Dr. Nott, of Mobile, Ala., published a work on yellow fever in which he upheld the mosquito theory of its origin and also surmised that the mosquito of the lowlands might be the origin of malaria. The most striking illustration, however, is the following: Dr. Louis Daniel Beauperthuy was born in Guadaloupe in 1803, and graduated with honor at the medical school of the University of Paris. He was a physician of strong biological tendencies and devoted much time to the study of tropical diseases, traveling about for this purpose from country to country, following epidemics. In 1853 he published an article in a scientific journal in Venezuela, where he was then working, from which I take the following pointed extracts: "The affection known as yellow fever, or black vomit, is due to the same cause as that producing intermittent fever." "Yellow fever is in no way to be regarded as a contagious disease." "The disease develops itself under conditions which favor the development of mosquitoes." "The mosquito plunges its proboscis into the skin * * * and introduces a poison which has properties akin to snake venom. It softens the red blood cells, causes their rupture * * * and facilitates the mixing of the coloring matter with the serum." "The agents of this yellow fever infection are of a considerable number of species, not all being of equally lethal character. The *sancudo bobo* with legs striped with white, may be regarded as more or less the house-haunting kind." "Remittent, and pernicious fevers, just like yellow fever, have as their cause an animal or vegeto-animal virus, the introduction of which into the human body is brought about by inoculation." "Intermittent fevers are grave in proportion to the prevalence of mosquitoes, and disappear or lose much of their severity in places which, by reason of their elevation, have few of these insects." "The expression 'Winged Snakes' employed by Herodotus is peculiarly applicable to the mosquito, and the result

of its bite on the human organism." "Marshes do not communicate to the atmosphere anything more than humidity, and the small amount of hydrogen which they give off does not cause in man the slightest indisposition in equatorial and inter-tropical regions renowned for their unhealthfulness. Nor is it the putrescence of the water that makes it unhealthy, but the presence of mosquitoes." Certainly this is a prognostication which has had a thorough scientific confirmation. He was clear as to the infecting agent, but fell into error in supposing that the poison was taken from decomposing organic matter and not from man. He believed that the poison was telluric, that it did not, however, come off in the form of a miasm or gas, but that it was carried and inoculated by the mosquito.

Surgeon General Blair in British Guiana suggested in 1852 an insect origin for yellow fever and in 1882 King in an article in the *Popular Science Monthly* on Malaria and Mosquitoes tabulated the facts in support of the mosquito theory of the transmission of this disease and showed conclusively that the word "miasm" could in every case be replaced by the word "mosquito."

The proof of the correctness of these theories was brought forward in 1897 by Major Ross of the British army medical corps, while working in India. He had been stimulated by the work of Manson and his discovery of the transmission of filariasis, and as the crowning result of a long, hard, often disappointing series of experiments he finally showed that when a certain variety of mosquito was allowed to suck blood from a person infected with malaria the parasites in the blood underwent certain developmental changes in the insect's stomach and later passed to the salivary glands from whence they were transmitted to man with the insect's saliva on the occasion of another meal on the part of the insect. It has also been proven that it is only the female mosquito which has this power of transmission as it is only the female that bites. Ross confirmed his work by successfully infecting with an avian form of the disease 22 out of 28 healthy sparrows by means of bites of mosquitoes which had previously bitten diseased sparrows. In 1899 three Italian workers transmitted malaria in this way from man to man, and in 1900 Manson, in London, had some infected insects

sent him from Italy and with them infected two men, one of them his son. Thus it is evident that malaria has no connection with miasm. The reason that it is associated with marshes and water is simply that mosquitoes breed there.

A further proof of the sole agency of mosquitoes in the transmission of malaria is in the tremendous success achieved in all parts of the world in reducing the number of cases and deaths from malaria merely by the carrying into effect of measures directed towards the extermination of the mosquito. Thus on the plain of Marathon in Greece, formerly a hot bed of the fever, the percentage of illness due to this disease fell from 90 in 1906 to 47 the next year, the first year of the campaign, and to 2 in 1908. In Rio de Janeiro from 1900 to 1903 there was an average of approximately 1600 deaths per year from this disease. An anti-mosquito campaign was started in 1903 and in the next four years ('04-'07) there was an average of 300 deaths. I might give many other illustrations equally striking.

YELLOW FEVER.

This disease like malaria was formerly considered to be miasmatic in origin, but unlike malaria it had not such a wide distribution. I say "had not" advisedly, for in recent years, since its mode of spread has been known, it has been restricted still further in its distribution. Yellow fever is essentially a disease of the New World, of South and Central America, portions of Mexico, Cuba, and the rest of the West Indies, from whence it has often spread to this country, more often the Southern part, but also to Boston, New York, Philadelphia, and Baltimore. It has also at times been carried along the paths of commerce to portions of Europe where it raged severely, especially in Spain. In that country in eight epidemics from 1800 to 1821 it is estimated there were 130,000 deaths from this cause. It has also been severely felt on the west coast of Africa, thought by some (probably erroneously) to be its original home. It is one of the very old diseases of the New World, indeed it is stated that it was known to the Aztecs. Among old Spanish writers, Oviedo describes the great mortality among the followers of Columbus in 1494, which was supposed to be due to the humidity of Santo Domingo, but was probably yellow fever.

Columbus himself wrote to the King of Spain concerning the illness among his men, attributing it to "peculiarities in the air and in the water" of the new land. No doubt these peculiarities were mosquitoes. There were numerous epidemics in the 16th, 17th, and 18th centuries. It was long known as the "disease of the Conquistadores," and often decimated the early settlements. Some early English statistics place the mortality among the English troops in the West Indies as high as 69 per cent of the entire number, and figures of 50 to 60 per cent are not at all uncommon. There have been probably about 100,000 deaths from yellow fever in the United States since 1793. In New Orleans there have been about 40,000 and in Philadelphia 10,000. In 1878 alone there were 5,000 deaths in Memphis, Tenn.

During this time there was nothing known as to the cause of the fever or the mode of its spread. The theory most generally held as to the latter was that it was spread through fomites (bedding, clothing, utensils of the sick, etc.). I have mentioned several early investigators who definitely adhered to the mosquito theory, and others who noted its association with the marked prevalence of mosquitoes were Drysdale of Baltimore in 1794, Rush of Philadelphia in 1797 and 1805, Vaughan in Wilmington, Del., in 1802. Finally in 1881 Dr. Charles Finlay of Havana published the first paper in which the mosquito solely was accused of transmitting the disease. After the Spanish war, and during the American occupation of Cuba, a commission composed of Drs. Reed, Carroll, Agramonte, and Lazear, of the United States Army, was appointed and sent to Havana to study the bacteriology of the disease and its mode of spread. Strongly impressed by the work of Finlay, who had previously claimed, but probably erroneously, that he had been able to transmit the disease by means of the bites of mosquitoes, they set to work on the problem. This was in 1900. They secured several volunteers, among them Carroll and Lazear themselves, and to them applied mosquitoes that had previously been fed upon persons suffering from yellow fever. As a result of the experiment several of these men contracted the disease, among them the two members of the board, and in Lazear's case the illness had a fatal termination. At the same time they conclusively proved by exhaustive experiments that fomites cannot

transmit the disease, and that the only way by which it can be transmitted is by the bites of infected mosquitoes. They further proved that a period of at least 12 days is necessary after the mosquito becomes infected for it to become able to transmit the infection, that period apparently being necessary for the infecting agent to develop in the insect's body. The commission was not able, nor has any worker since been able, to discover the nature of the infecting agent, though numerous investigators have confirmed the part which the insect plays. The disease has also been experimentally passed on to a chimpanzee in the same way.

A further proof of the soundness of this theory is the fact that by bringing into play methods of mosquito repression and destruction Havana and Vera Cruz, long hotbeds of yellow fever infection, have been rendered free from the disease. A serious epidemic in New Orleans in 1905, and one in Texas, was completely conquered in a short time by this same means. Finally in Panama where the disease has existed for centuries, being the chief obstacle to the French in their attempts to build a canal, carrying off 10 to 12 per cent of the workers yearly, no cases have originated there since 1905, the year when the sanitary work was begun. When one considers the extent and topography of that country, the tremendous non-immune population, and all the other factors which would tend to make the eradication of the disease difficult, this certainly must be considered a good proof of the value of the measures undertaken and of the theory upon which they were based.

DENGUE, BREAKBONE FEVER, DANDY FEVER.

These are names applied to a tropical fever of wide distribution in both the Old and New Worlds. It usually occurs in epidemics and resembles in some slight degree yellow fever. Unlike this disease, however, the mortality in uncomplicated cases is practically nil. It has also been the object of studies along the line of possible mosquito transmission, with successful results. Various researchers have proven that it is transmitted, and probably solely so, by mosquitoes (*Culex fatigans*). The disease is often seen in the Southern United States.

Now a word about mosquitoes. I have so far spoken of them as if they were all alike, or as if perhaps any variety might carry any of the above diseases. But the facts of the matter are far different.

All true biting mosquitoes belong to the order of diptera or two winged flies, family Culicidae, sub-family Culicinae. There are several genera of this sub-family, but the only ones which concern us here are *Anopheles*, *Culex*, and *Stegomyia*, each of which genera is subdivided into several species. Of them only *Anopheles* is responsible for the transmission of malaria, *Stegomyia* (*calopus*) for yellow fever, and *Culex* (*fatigans*) for dengue. All species apparently carry filaria. Not all species of each genus are able to carry the diseases in question.

All mosquitoes pass through four stages in their life history,—egg, larva, pupa, and the mature adult fly,—in the second and third of which they live in the water, and in the first in, on, or near the water. Different mosquitoes vary somewhat in their feeding and breeding habits.

Culex is in this latitude, where we have no dengue and no filaria, innocent of disease carrying power. It is cosmopolitan in its habitat and breeds in either salt or fresh water, depending upon the species. It is here the usual domestic or rain-barrel variety. It takes about 10 days to pass through its various stages of growth and innumerable generations are matured each summer. Of the *Anopheles* practically all species are able to carry malaria. There are seven species in this country. It breeds in fresh water, in gutters, roadside pools, and swampy places. Practically all species bite only at night. It takes about 20 days to mature from the time the egg is laid. *Stegomyia* is a small insect, resembling the *culex*. It bites and is active by day, but also bites at night. It breeds only in fresh water and is essentially a domestic insect, seldom found far from human habitations. Its favorite breeding place is in rain barrels, cisterns, or chance accumulations of water such as in tin cans or even vases of flowers. It develops in about eight and one-half days. Only one species is known to transmit disease.

The various genera are distinguished from one another by various structural differences which are hard to explain without diagrams or a full knowledge of the anatomy of mosquitoes.

Suffice it to say that all the anopheles in the United States except one rare species have spotted wings, while the wings of culex have no spots. Stegomyia calopus has striped legs which anopheles has not. When a culex mosquito lights on the wall or ceiling the body is always held parallel to the surface upon which it is standing, while an anopheles holds the body at a decided angle from the surface, often as much as 80 degrees.

TYPHUS FEVER.

This is an acute infectious disease which runs a short course of from 12 to 15 days and terminates abruptly. It is characterized by a high continued fever, a haemorrhagic rash, marked nervous symptoms, and usually by a high mortality. It has always been considered as highly contagious especially for those who were brought into close and intimate contact with the sick such as physicians and nurses and members of the patient's family. This high grade of contagiousness was formerly much more marked than in recent outbreaks of the disease when the patients have been treated in modern hospitals under conditions of cleanliness and all that goes to make up modern hygiene.

The name in Greek signifies mist or smoke and was used by Hippocrates to describe any condition associated with stupor or mental dullness. Other names by which this disease has been known are pestilential fever, jail-, army-, camp-, or ship-fever, all of which names well indicate the conditions under which it has been most commonly seen with its greatest intensity. It has been one of the great epidemic diseases of the world, and "its history is written in those dark pages which tell of the grievous visitations of mankind by war, pestilence and famine." It has been suggested that the plague of Athens which decimated the populace when during the siege of that city they were overcrowded and suffering from famine, was typhus, and it is possible that many of the epidemics of antiquity spoken of in the writings of Livy and Tacitus, and even in the books of the Old Testament as "pestilence" were also visitations of this disease.

Were I to go into more detail as to the historical aspect of this disease I could tell you of numerous tremendous epidemics

in the middle ages and even through the early part of the last century, but suffice it to say that during the Thirty Years War (1619-1648), during the Napoleonic wars, the Crimean war, and the Russo-Turkish war of 1878 it created great havoc. In the latter it has been estimated that 100,000 Russian troops were ill with the affection and that fifty per cent of them died. Many of the famine fevers in Ireland were largely typhus, though relapsing fever, of which I will later speak, was here of equal or even more importance.

In this country we have been strangely free from serious outbreaks of typhus fever though some epidemics have at times appeared, notably in New York in 1863 and 1864 and also in Philadelphia in the latter year, and again in New York in 1880 and 1881. In Mexico the disease has raged from the earliest times, possibly even during the Aztec empire, but it is here now confined to Mexico City and to the central plateau.

Except for an occasional sporadic case the disease had been thought to have been entirely absent from this country during the last thirty years, but some recent and very important studies which have been made in New York by Dr. Nathan Brill upon an apparently new and unknown disease, and continued by Anderson and Goldberger, have proved that it is a mild form of typhus fever which is apparently endemic in portions of the crowded East Side and in other coast cities. Nor is this to be wondered at when one considers the countless hundreds of dirty, squalid, lousy (I speak advisedly) immigrants who come crowding into our seaports every year from the poorer parts of Russia and other European lands, where the disease is constantly present.

The disease has long been known as a typical filth disease, one which rages under conditions of poverty, dirt, squalor, famine and over-crowding. This can be easily surmised by you from the synonyms which I have already given. Unless in times of great epidemics, or in the case of persons who are brought into intimate contact with patients suffering from the disease, it is rarely found among those who are clean and who live under sanitary and proper hygienic surroundings.

The causative agent is still unknown but we are considering to-night especially the method of the transmission of disease.

The rôle of insects had been suggested and experiments along these lines had been attempted by different workers, but not until the fall of 1909 was this successfully accomplished. Following the previous successful experimental transmission of typhus fever to monkeys by inoculating them with the blood of human beings ill with the disease three workers in Tunis and, almost simultaneously, also Drs. Anderson and Goldberger of the Public Health Service, working in Mexico with the Mexican variety of the disease, Tabardillo, succeeded in transferring infection from one monkey to two other monkeys and from man to monkey by means of the bite of the common body louse of man, (*Pediculus vestimenti*). This work was confirmed later by Ricketts and Wilder, also working in Mexico City. The method used was the same as that I have previously mentioned in connection with other diseases and insects, of allowing these mites to bite an individual suffering with the disease, usually on several occasions or several patients, and then after a varying period of time to bite an uninfected monkey. In the successful experiments the animals thus bitten developed the disease after the proper interval of time. The last named workers also succeeded in producing it by introducing into scarifications on the skin of monkeys the abdominal contents of infected lice. More recently Anderson and Goldberger in following out still further their earlier work have demonstrated that infection may take place by using the human head louse (*Pediculus capitis*), instead of the body louse. The transmission of typhus from man to man by this means has to my knowledge not been attempted.

This proven method of transmission will of course explain the occurrence of typhus among those of uncleanly habits and in the poor and overcrowded. It will also explain its usual absence among the better classes, and also the transmission of the disease to those in intimate contact with the sick. Furthermore it is interesting to recall that many of the sporadic cases have been among vagrants and that the disease has been definitely carried from place to place in the past by this same class of individuals.

As in the case of Lazear, who died of experimental yellow fever, so Ricketts fell a victim to typhus during his experiments and died a martyr to his zeal and to the cause of science.

TRYPANOSOMIASIS.

The group of diseases which come under this heading are found over a large portion of the globe from South America, through Africa, Southern Europe, Persia to India, Burma, China, and the Philippines, and affect many kinds of animals including man. They are caused by the presence in the blood and the body fluids of different species of a single celled animal parasite of worm-like form. These parasites are rapidly motile, swimming equally well in either direction. They give rise to a variety of diseases, some very acute lasting only a few days or weeks, others so chronic as to take years to kill. Sometimes they live in the blood of the host without apparently causing any symptoms of disease. They are however extremely fatal for man and the domestic animals.

They were discovered in the blood of fish and frogs in 1841, in rats (India) in 1877, in horses (India) in 1880, in cattle (Africa) in 1894, and in man (Africa) by Dutton in 1901. I shall consider here only the human form of the disease.

This is found only in Africa where it is known in the early stages as Trypanosoma fever or Gambia fever, and in the late stages as Sleeping sickness. It has been known for over 100 years on the West coast, but has lately spread widely through the interior owing to the opening up of the country and the increased inter-communication between districts formerly completely isolated. It affects principally the blacks but some cases among Europeans are now known. The disease is very chronic, taking years to kill but is probably invariably fatal, no known case of recovery having been reported. Large native populations are being swept away by the plague, large areas of country completely depopulated. In the three years from 1904 to 1907 it is estimated that there were 100,000 deaths in Uganda province alone. In the early stages there are few symptoms but the later stages are marked by such a severe degree of lethargy and finally of complete helplessness and unconsciousness that the name "sleeping sickness" has been given to it.

Bruce in 1894 proved that *nagana*, the trypanosome disease of cattle, was transmitted by a species of biting fly, the Tsetse fly (*Glossina morsitans*), and that the disease was limited entirely to the portion of the continent where these flies were found, the

so-called "fly country." In 1903 he showed that another species of tsetse fly (*Glossina palpalis*) was the agent of transmission in the human form of the disease. He was able to transmit it from man to monkeys by the bites of these flies. No human beings have been experimentally infected.

These flies are somewhat larger than our house flies and are found only along the banks of rivers and lakes in the deep brush and in a strip of land only about 30 yards wide. It is not found much beyond this distance from the shore. At first it was thought that they only acted as mechanical carriers but later investigations by Bruce and Kleine have shown that while they may transmit it in this way for two days after biting an individual with the disease, they also act as a true host as in the case of mosquitoes with malaria or yellow fever. After the first period of infectivity is over a latent period of about twelve days supervenes during which the fly is not capable of transmitting the infection, owing to the fact that this period is necessary for the trypanosomes to reach the full state of further development necessary for it to cause infection in another host.

Methods of fly destruction and other means of prevention of infection have been undertaken in equatorial Africa with the result that already the death losses from this disease have been greatly reduced.

RELAPSING FEVER, TICK FEVER.

This acute disease, usually occurring in epidemics, has been long known in Europe, where it was formerly confused with typhus and typhoid fevers, but definitely recognized as an independent affection in the Irish and Scotch epidemics of 1826 and 1843. It has been introduced into this country on two or three occasions but showed no tendency to spread. It is due to an infection with the Spirillum of Obermeier, a long corkscrew-like organism, found in the blood and internal organs, discovered by Obermeier in Berlin in 1868. Epidemics of a similar disease in Egypt, India, and the far East (Philippines) were thought to be due to the same organism, but it is now believed that there are at least four types of the disease each due to a different but related species of spirillum. The African form was discovered in 1904 independently by Dutton and Todd, and Ross and Milne

and named S. Duttoni after Dr. Dutton, who, like Lazear and Ricketts, lost his life during his study, a victim of the disease upon which he was working.

Dutton and Todd demonstrated that the disease could be carried from man to man and from man to monkey by the bite of a tick (*Ornithodoros moubata*) a verminous insect living in cracks in the walls and floors of houses and native huts, hiding by day and biting by night. The disease is therefore called tick fever. The organism undergoes a certain development and multiplication in the body of the tick, but whether it passes through a definite cycle like the protozoa is not known. It has been proven that the adult tick may herself carry the disease and that the organism can also infect her eggs, and through them the larvae, even to the second generation, which can then in turn infect man and other animals. These results are similar to those obtained in the early work upon Texas cattle fever. The bed bug may be responsible for the transmission of the European form of the disease as well as the Indian form, though the evidence is not yet conclusive. Recently several investigators in India and Algeria have found the parasite in the bodies of the common body louse in from 2 to 14 per cent of insects examined, and it would seem from their experiments that this insect too might transmit the infection.*

A common and similar disease in fowls is also transmitted by a common tick (*Argas miniatus*) which infests these birds.

ROCKY MOUNTAIN FEVER.

This disease has also been proven to be transmitted by ticks. It appeared in Montana in 1873 and in Idaho in 1885 but is now found in at least seven of the Western States. It is a dis-

* Since this paper was written I have seen a recent article by Nicolle, Blaziot, and Conseil in which they detail some experiments conducted by them in Tunis on the transmission of this disease by the louse. They find that both the body and head louse may become infected by biting individuals sick with this disease, and that the infection may be hereditary in the louse. As the spirilla apparently become localized a few days after biting in the body cavity of the insect from whence there is no escape during its life, infection of man or monkey only takes place by crushing the insect and thus liberating the spirilla into excoriations of the skin, etc. Bites of seemingly infected lice were without effect in producing the disease even when they reached the enormous number of 6,515. Earlier infection may take place through infection of the bite by the excrement of the insect.

ease with usually a high mortality, and it somewhat resembles typhus fever, though it has been shown not to be the same. It is limited to the spring and early summer, the season of the year when ticks are prevalent. When they disappear it too disappears until the next year. It has probably had its origin in some of the wild animals of that region and has been transmitted from them to man.

Ricketts and others have been able to prove its transmission from man and other infected animals to monkeys, guinea pigs, squirrels, woodchucks, and other rodents, by the bite of the wood tick (*Dermacentor andersonii*) and other ticks. There is evidence that the virus of the disease develops in the body of the tick and is transmitted to its offspring. The nature of the infecting agent is not known.

KALA-AZAR OR DUM-DUM FEVER.

This disease occurs in various tropical lands particularly in India. It is a chronic disease characterized by anaemia and an enlarged spleen. A similar disease is found in some parts of Northern Africa where it occurs almost exclusively among children. Leishman and Donovan in 1900 and 1903 discovered certain bodies in some of the internal organs of persons suffering with this affection which have been cultivated and are now recognized as the protozoan cause of the malady. The parasite has been named *Leishmania donovani* after the two discoverers. Similar parasites have been proved to be the cause of the juvenile form, which is also known to infect dogs, and of another disease known as Oriental sore, Oriental boil, Aleppo boil, etc. There is some evidence to show that the Indian form is transmitted by the bite of the bed bug (*Cimex lectularius*) and perhaps by another blood sucking insect. Certain it is that the parasites have been found in the bodies of the bugs, where they undergo a definite cycle of development. The juvenile form is thought to be transmitted by the bite of the dog flea or perhaps by the human flea which has bitten infected dogs.

PHLEBOTOMOUS FEVER.

Along the Mediterranean coast, particularly in the eastern part, there is frequently seen, sometimes in a severe form, a disease caused by the bite of a minute, gnat-like fly (*Phlebotomous pap-*

tasii). This fly is semi-aquatic in its habits, and is a fierce biter despite its minute size. The infecting agent of the disease is not known further than that it is a living invisible virus. The disease has not been seen in this country.

INFANTILE PARALYSIS, POLIOMYELITIS.

For many years physicians have recognized as examples of a definite disease cases which gave a history something like this: A child (the disease usually but not always occurs in children) has a sudden attack of fever with perhaps nausea and vomiting and after a day or so or more it is discovered that the baby can not move its arm or leg or both; or perhaps the baby is put to bed perfectly well and in the morning it is found to be paralyzed. This paralysis usually clears up in part and in rare cases entirely but generally some of the paralysis remains permanently and the child becomes a cripple with a withered arm or leg. This disease has been called infantile paralysis and from the fact that its chief lesion is an inflammation of a part of the spinal cord it is scientifically called acute anterior poliomyelitis.

Such cases were seen occasionally and perhaps several at about the same time, but until a few years ago the disease did not in this country reach the epidemic proportions which it had in parts of Europe, especially Scandinavia. Recently it has become a frequent and very serious epidemic disease in the United States. There were certain facts concerning the appearance of these cases which led observers to believe that it might be due to some micro-organism or even be contagious, and much experimental work has been done upon it in Europe and in this country. By the brilliant work of Flexner and his assistants at the Rockefeller Institute in New York we now know that it is caused by a very minute organism, of as yet uncertain nature, which can be cultivated, and that the disease can be experimentally transmitted to monkeys; in general we are beginning to know much about many hitherto obscure features of the malady.

Experiments have been carried out in New York and elsewhere with the object of ascertaining whether it can be transmitted by insects, for many of the circumstances connected with its spread point that way. Howard and Clark found that at least certain mosquitoes were unable to take up the virus from

infected material, and also that body and head lice were unable to take it out of the blood of infected individuals. The bed bug (*Cimex lectularius*) on the other hand can remove the virus from the blood and maintain it in a living state within its body for at least seven days. Most of the experiments, however, along these lines were fruitless until in the summer of 1912 Dr. Rosenau of Boston was able to infect monkeys by means of the bites of large numbers of the stable fly (*Stomoxys calcitrans*). This work has been since confirmed by Anderson and Frost and by Rosenau and Brues.

Other methods for the dissemination of the virus are also known (the common house fly can carry it in an active state for several days on the surface of its body and for several hours within its gastro-intestinal canal) (Howard and Clark) but the exact method for its usual transmission from one individual to another is as yet unknown.

So far we have considered only those diseases in which various insects act, or are supposed to act, as biological carriers, those in which the infecting organism undergoes certain developmental changes in the body of the insect rendering it able to further infect man or other animals. The evidence in some of the cases mentioned is not positive but is very suggestive, and is almost conclusive, to judge from analogy and from certain other facts which I have not dwelt upon. I will now present some examples of disease transmitted by mechanical carriers. These are of two varieties, those which obtain the infecting agent by sucking blood from a man or other animal sick with the disease and then inoculate other men or animals by further bites, and those which obtain the infecting or contaminating material entirely independently of the patient, usually carrying it upon their bodies or in their intestinal tract to be deposited with their excrement.

MECHANICAL CARRIERS, DISEASES CAUSED BY BLOOD SUCKING INSECTS.

With one exception, which I will speak of in a moment, these are not important, not from the standpoint of the disease, but from our standpoint this evening, that of transmission, as this is not the usual or even a frequent method for their spread. Diseases carried by biological carriers are practically all protozoan

in origin, those carried by mechanical carriers are bacterial in origin. Here the rôle of the insect is not necessary to the spread of the disease and is merely an incident, almost an accident. There is only one stage in the life history of bacteria (if we exclude the rather rare spore-forming stage), they undergo no change in the body of the host.

Bed bugs have been known to contain tubercle bacilli in their stomachs and might perhaps so infect a person, but you will agree with me that this is certainly not the usual, nor even more than an accidental, source of infection with this disease.

So too, the same insects have been known to transmit typhoid fever experimentally from a patient to at least two healthy men, but here again this is rare and unimportant. Body lice might do the same thing.

Bed bugs have been thought to carry smallpox on two or three occasions, but it was not proved.

Septic infection ("Blood poisoning") following the bite or sting of an insect is not unknown and might almost be expected at times. However these infections are usually brought about by scratching such a bite after it has occurred.

ANTHRAX.

This is chiefly a disease of cattle and horses and is due to a general infection by a large bacillus. Men who handle horses and cattle, and workers in leather and hides, some of which may have been taken from diseased cattle, sometimes contract it. Several authors, usually on *a priori* grounds, have suggested that biting flies might transmit it. This is certainly not impossible, especially where anthrax is at all prevalent among animals and where biting insects pass from the diseased animals to human beings, but if it were a common mode of infection cases of the disease in man would be much more common than they are. Experimental transmission to animals by means of the bites of bed bugs and fleas has never been accomplished.

PLAQUE.

The one important disease of this class is plague. There seems to be some question as to the age of the knowledge of this disease. Osler says, "The disease was probably not known

to the classical Greek writers," and fixes the second century of our era as that of the earliest positive account. Other writers mention epidemics described by Rufus of Ephesus (100 B. C.) as being undoubted plague, and cite his accurate description of the specific symptoms. Most early accounts of "plagues" and "pestilences" are too indefinite for us to draw any positive conclusions from them that they were true bubonic plague. Certain it is, however, that the "Justinian plague" which raged in Egypt, about the Mediterranean, and through Europe from 542 to about 600 A. D. was undoubtedly this disease. In 1346 an epidemic spread from Western Asia to Asia Minor, Egypt, and Europe, covering all the then known world, and often depopulated whole villages. It was at this time first spoken of as the "Black Death," from the haemorrhages which occurred under the skin (similar to our modern "black smallpox," "black measles," etc.). An estimated mortality of 25,000,000 has been given for this pandemic, about one-quarter of the entire population. In the great plague of London in 1665 about 70,000 people died.

In the 18th and 19th centuries the ravages of the disease lessened, and, though it was known to be present in some parts of Asia, it was thought to be mainly a disease of the past. The outbreak in Hong Kong in 1894 startled the world. From thence the disease spread practically all over Asia, and has at times reached Europe and America along the paths of commerce. There was an outbreak in Chinatown in San Francisco in 1903-'04 and a larger one in 1907, when there were 160 cases with 77 deaths, the last in January, 1908.

In India, especially in the Punjab, Bombay, and the United Provinces, with a combined population of about 100 millions, about 5,500,000 deaths have occurred from 1896 to the middle of 1911. In the remaining provinces, with a population of 200 millions, about 2,000,000 deaths have occurred. In the first six months of 1911 there were over 600,000 deaths in India. The Manchurian epidemic in 1910-11 of pneumonic plague carried off about 4,500 persons in a few months.

The disease occurs in three principal types: 1, The bubonic form, characterized especially by the enlargement and suppuration of the regional lymph nodes, the buboes; 2, The septicaemic

form, a generalized blood infection with the organism; 3, The pneumonic or pulmonary form. The last two types are almost invariably fatal.

THE ASSOCIATION OF RATS AND PLAGUE.

There is recorded in Samuel I, chapters 5 and 6, a fatal epidemic of "emerods" among the Philistines associated with an invasion of "mice." Some of the earliest Greek coins represent Aesculapius, the god of healing, as seated with a rat at his feet. The conclusion of some writers that these examples prove that the ancients recognized the association of rats with bubonic plague is to me rather fanciful. However, the inhabitants of Southern China have in recent times learned to look upon the finding about their houses of the bodies of sick or dead rats as a harbinger of evil, in fact as a forerunner of the dread scourge. Dr. Mahé, the sanitary officer in Constantinople, in 1889 called attention to the fact that epidemics of plague were always preceded by a great mortality among rats and mice, and in 1894 Yersin reported a fatal epizootic among rats in certain portions of China, coincident with an epidemic of plague among the Chinese. These observations have been confirmed by recent researches, and indeed it may be said that wherever in recent years the disease has prevailed the relation of rats to its spread has been noted. After the discovery by Yersin in 1894 of the causal organism (*Bacillus pestis*), the human and rat diseases were found to be identical.

Nothing definite was known as to the mode of transmission of the disease from one individual to another, whether man or rats or both, until the very careful and painstaking experiments of the Indian Plague Commission in 1905, though various investigators had previously suggested the rat flea as the responsible agent. Indeed Nuttall and Simond, working independently, had demonstrated the presence of *B. pestis* in the bodies of bugs and fleas which had been taken from the bodies of plague-sick rats. The findings of the Indian commission may be summarized as follows: That fleas and bugs taken from plague-sick rats contain *B. pestis*, and that some of them remain alive in the bodies of the insects for from five to sixteen days: that plague is conveyed by the bites of fleas which have previously fed on the blood

of animals suffering from the disease: that rat fleas bite man; that under experimental conditions the infection is not transferred from rat to rat in the absence of fleas.

A careful study of the findings of the workers in India justifies the assumption that plague is primarily a disease of rodents and secondarily a disease of man. The facts collected during the recent outbreak in San Francisco lead to the same conclusion. As a result of this work our practice in regard to suppressive measures and quarantine procedure has undergone a radical change. If the infection is flea-borne from rat to man in the majority of cases, then the extermination of the rat should be the first principle upon which to base a campaign. Unsanitary conditions, formerly thought so important in the spread of plague, play no important part, except in so far as they furnish food and shelter to rats and other vermin. Mice apparently are not concerned in the spread of the disease but the ground squirrel has been found infected in the neighborhood of San Francisco, apparently infected from rats. It is probable that any blood-sucking insects will take the *B. pestis* into their alimentary canals if they feed on a septicemic plague animal, but after a careful study of all the facts all such insects except the flea can be dismissed as the *active* agent. There are various fleas which infest rats and which may bite man on occasion, and the human flea may, though usually does not, bite rats. The infection passes to man by means of the bite, but probably not in the act of biting; flea bites are apparently secondarily infected by the excrement of the flea passed at the same time, or by the flea being crushed on the body.

FLIES.

Of the diseases which are carried by insects whose bodies are grossly contaminated with the organisms of infection the principal example is typhoid fever, and the principal agent for the spread of this disease in this manner is the fly. So great is this danger and so extensive is the evidence which has been collected along these lines in recent years that it has been suggested that the name of the common *house fly* be changed to that of the *typhoid fly*. Another name which has been suggested is that of the *filthy fly*. That both of these names are entirely adequate I think you will soon see.

My remarks upon the diseases and insects to be considered in this section of my paper will therefore be almost exclusively limited as I have indicated.

The domestic or house fly (*Musca domestica*) is an insect pre-eminently fitted to be a carrier of filth and contagion. Let us briefly follow its life history. The female selects the manure pile in the stable yard or human dejecta in the open privy, or garbage, dead animals or other refuse in which to lay her eggs, in short any decaying animal or vegetable matter subject to proper conditions of moisture and warmth. She lays about 100 to 150 eggs at one time, and five or six, possibly more, batches of eggs can be deposited during her short life. Flies usually begin to breed in June and July, and continue till October, the greatest activity being in the warmest months of August and September. In warm weather the eggs hatch in from eight to twenty-four hours after being laid, when the larval or maggot stage begins, which in turn lasts about forty-eight to seventy-two hours, depending again upon temperature and moisture. From this stage it passes into the pupal stage which lasts about four or five days, when the adult fly emerges and begins its life work of scattering filth and rearing its young. The adult fly becomes sexually mature in about ten to fourteen days after emergence from the pupal state and in four days after mating is able to lay eggs. Thus the whole period of development under proper conditions of moisture, etc., is about nine or ten days, and in fourteen days more the second generation may deposit her eggs; a total period of hardly more than three weeks. Thus the astonishing fecundity of the insect will be readily appreciated and one ceases to wonder at the statement that it has been calculated that if the progeny of a single pair of flies, assuming that they all lived, were pressed together at the end of the summer, they would occupy a space of about a quarter of a million cubic feet.

The feeding habits of the fly are most important from our standpoint. The fly is ubiquitous, it is everywhere, and it is not at all particular about its food; the choicest dish on the table of the rich, the bottle of the infant in the tenement, the foulest refuse in the street or on the dump, tuberculous sputum in a spittoon, typhoid dejecta in a latrine are all meat and drink

to our table guest. From one to the other it flits at its own pleasure regardless of any consequences to others. Is it any wonder it may, and does, cause disease?

In addition to feeding on filth and depositing its specks on our food, a tremendous number of bacteria are carried on the body, feet and legs of a fly. Its body is thickly covered with hairs of varying length and its feet and legs resembles brushes. It is needless to point out the ease with which such an insect can carry bacteria, harmless or harmful. Some recent studies by Torrey on the numbers of bacteria carried by a single fly give the following astonishing results: On the surface of the body, 570 to 4,400,000, depending upon the time of year and the (apparent) length of time after the fly has matured. In the intestinal canal, 16,000 to 28,000,000. These figures speak for themselves. These studies included isolation and classification of the varieties of organisms found. Among them were cocci from horse manure, and bacilli from human dejecta; among the latter was the paratyphoid bacillus.

The idea that flies carry disease germs is not new. I would refer you to Deuteronomy, chapter XXIII, 12, 13, for the instructions of Moses along some hygienic lines, which have been suggested as evidence that he knew of this connection. A fanciful suggestion perhaps, but strictly in the line of modern camp hygiene. In 1865 G. Declat, a Frenchman, in a study of modes of infection, made the following pointed statements: "The fly visits bodies in the process of decomposition." "Decomposition is nothing more or less than destruction by ferments which are living microscopic structures." "The fly transports on its feet, its wings, its proboscis, or its manibles, some of these destructive agents." "This material is carried to and deposited upon the living body, where, if there is any abrasion, or fissures, or any solution of continuity whatever, the contagious virus does its work by entering the vascular system and multiplying indefinitely." These are certainly remarkable statements when one considers the date at which they were written and the entire absence of any general idea of infection at that time. Lord Avebury, writing in 1871, referred to the habits of flies alighting upon decomposing substances and carrying impurities, especially the secretions of unhealthy wounds. He said that rather than

regard them as dipterous angels dancing attendance on Hygeia we should look upon them as winged sponges spreading hither and thither to carry out the behests of foul contagion. Leidy in the same year declared his belief that flies were responsible for the spread of hospital gangrene and wound infection during the Civil War.

Nevertheless, this subject escaped the attention and study it deserved until after the report of the commission of American army surgeons appointed by the Surgeon General to study the origin and spread of typhoid fever in the military camps during the Spanish war of 1898. Their conclusions on this point are as follows: "We are satisfied that the evidence furnished by our studies is sufficient to show beyond reasonable doubt that the most active agents in the spread of typhoid fever in many of the encampments in 1898 were flies. The reasons for coming to this conclusion may be summed up as follows:

"(1) The latrines contained fecal matter specifically infected with the typhoid bacillus. (2) Flies alternately visited and fed upon this infected fecal matter and the food in the mess tents. More than once it happened when lime had been scattered over the fecal matter in the pits, flies with their feet covered with lime were seen walking over the food. (3) Typhoid fever was much less frequent among members of messes who had their mess tents screened than it was among those who took no such precaution. Typhoid fever gradually died out in the fall of 1909 with the disappearance of the fly and this at the time of the year when typhoid fever in civil practice is on the increase."

The experience of the English army during the Boer war was similar.

Wald noted in a certain workmen's camp in Minnesota that the Italian workmen did not contract typhoid fever because, as he thought, they did not eat between meals, while the Finns suffered severely because they kept their food laid out on the table all the time, where it was exposed to innumerable flies, and helped themselves during the day at random. I might cite other as convincing examples. Bacteriological studies made upon flies caught in houses where there were cases of typhoid fever have shown repeatedly that they contain typhoid bacilli in or on their bodies.

Thus you will see that the incriminating evidence against the fly is strong. Though the chances of its carrying infection in a well regulated city with proper garbage and sewage disposal are less than in rural districts, yet the possibility exists. The experiments just mentioned were carried out in cities. This possibility should be guarded against by screening the houses, and carrying out a properly planned and vigorously conducted campaign against the insect and against its possible foci of origin. "Swat the fly" is a good motto, but a better one is "Away with his breeding places."

Other diseases which have been accredited to the fly as a carrier, at least at times, are cholera, dysentery, summer diarrhoea of children, spinal meningitis, anthrax, smallpox, tuberculosis, diphtheria, plague, erysipelas, and contagious ophthalmia. The evidence varies in its strength in different instances, but in any case we know enough to realize that the fly is an enemy of man and of the public health and not the friend that it was long supposed to be.

Thus the study of insects and their life history and their rôle in the spread of disease has showed us how very important they are, it has made many formerly obscure problems now easy of solution, has opened up new avenues of attack against plague and pestilence, and has given us hope that the future will bring forth even more knowledge which will enable us to prevent still more sickness and death and still further lengthen the three score years and ten which have been allotted us in which to live and work and play.

In this connection how peculiarly applicable are the lines of Weir Mitchell:

"How keen the wind-thrill of delight
When some new sun illumines our lessening night,
And problems, dark for many a weary year,
Shine, simply answered—luminous and clear."

SOME ASPECTS IN RELATION TO THE CHRONIC GONORRHEIC, FROM THE STANDPOINT OF SURGERY AND EUGENICS.

Read at the meeting of Medical Society of the State of New York, held in Rochester, New York, April 29, 30 and May 1, 1913.

By JAMES N. VANDER VEER, M. D.,

Albany, N. Y.

It has been my good fortune in the years in which I have made a study of these conditions to have sufficient time and the accompanying technique at my command to study lesions of this nature to a greater extent than perhaps falls to the lot of the average surgeon. And the question has naturally arisen in my mind (owing to the fact that the majority of cases which I see are referred ones) how much actual attention the practicing physician pays to these lesions.

Why is it that one man suffers from a chronic infection of his urethra for six months, while another is enabled to throw off the same nature of trouble in four to eight weeks? How comes it that we have a multitude of cases sent us from certain physicians, while others who seemingly conduct their practice in the same manner, send us but few? How technically does the average physician or surgeon examine his case and lay out a strict line of treatment with advice as to the conduct, care and diet of his patients?

These questions have been constantly uppermost in my thoughts and have become more prominent in the last few years as the study of the practice has become diversified.

The one disease in which the surgeon is constantly called upon to pass an opinion is that of the chronic gonorrhœic, and the questions usually put to him by the patient are, the nature of the infection, its severity, and the extent of time which must elapse before a cure can be effected.

In carefully going over the office statistics of the last five hundred cases, which have sought consultation and treatment, it has been impressed upon me that practically all of the patients have passed through the hands of many and varied consultants, without even a history or a treatment being recorded; without

an absolute diagnosis of the infecting organisms being made, and without an examination usually of other parts of the body.

There has also been forced upon me the fact that he who suffers from a chronic infection of this nature is a wanderer in the field of medicine, and gets well rather through nature's efforts, than at the hands of the doctors, and that the so-called incurable case, if he persists in the treatment laid down after the establishment of an accurate diagnosis, is usually the easiest one in which to bring about relief.

How long will the profession at large allow itself to look upon a mild but chronic infection of the urethra as of little importance, and blind itself to the ultimate and sad damage resulting from an uncured case?

How long will our physicians delude themselves into thinking when a patient presents himself in the office with a lesion of this tract, that it requires but some simple or favorite prescription to cure the disease, and neglect the necessity of a carefully stained smear of the urethral secretion, of a urinary culture, and an examination with the microscope of the various constituents of the urine when voided in separate parts; of the invaluable use of the endoscope and cystoscope; of a blood culture now and then; to say nothing of the use by laboratory means of our best friend—the guinea pig, to determine as to a diagnosis and cure. How much longer must we endure the constant traveler who infects his companion, and in turn is reinfected from a new source when all such cases are allowed to pursue their separate paths without legal restraint? .

Questions such as these carefully considered at the present time, while the hue and cry of the white slave traffic, sexual hygiene and tuberculosis are being forced upon the public, seem to demand a firmer stand on the part of the medical profession and to require that steps be taken to face problems now brought so squarely before us.

The average patient who comes to his physician suffering from a lesion of the genito-urinary tract, certainly requires and deserves a most careful examination on the part of that practitioner; not alone regarding the anatomy involved, but concerning his general health as well and the various localized points from which a reinfection can easily retard his return to perfect

health. The work of Hunner has proven the connection between infections of the tonsils and the urethra in women. He has eradicated certain infections of the urethra after carefully examining the tonsils and submitting them to treatment, having found organisms there similar to those in the urethra. This should open the eyes of our practitioners to the viewpoint that not alone are lesions of this nature to be considered as originating in the parts in question, but that possibly other sources may give rise to the constant irritation which we find in such cases.

The writer has at his hand an excellent laboratory—the Bender Laboratory—with an equipment and force sufficient to render mooted bacteriological questions easy of solving, and in a number of cases cultures taken of the blood, from the teeth, from the nose, and occasionally even from the eyes and ears have shown the same organisms present in these organs as were found in the parts of the genito-urinary tract suspected as giving rise to the points of reinfection, and when adequate consideration and technical treatment have been given to these sources of reinfection by competent consultants, it has been a matter of great pleasure to find the local manifestations rapidly disappearing and eventually eradicated.

One hitherto undescribed source of reinfection has been ascertained in the lack of care in which the penis is allowed to rest with the meatus unprotected and rubbing over parts of the underclothing which are constantly in contact with the anus; and many of the colonic infections of the urethral tract which have seemingly been cured, and have given negative results on repeated bacteriological tests, only to reappear later, have ceased in their recurrence when the patient has worn a protective apron, or a bit of cotton constantly at the end of the penis. This measure has obviated the dreaded recurrence of the colon organism after weeks and months of absence.

Too little attention, we believe, but do not urge, unfortunately, is given to the after-care of the patient, and his duty toward the State and his fellowmen, following a supposed cure; and too often undoubtedly, do we allow the chronically infected to marry and to transmit the infection to the innocent, and too often do we find the innocent one coming to us having been infected by one who has taken no care of himself or herself.

or who has been pronounced cured through an irrational measure of diagnosis by some careless physician.

While the physician through State laws, compels himself and his colleagues, to register certain contagious diseases with the local health officer, it seems a curiosity of fate, that those who can transmit through contact the vilest diseases, and those most sorrowful in result, should go unwatched, and that there has always been raised a cry against the publishing of results of these diseases; until the last few years have seemed to presage a sweeping away of these curtains of false modesty, and a desire has been aroused to let the truth be known.

Burr of Chicago, in his article before the Section on Hygiene and Sanitary Science of the A. M. A., in 1906, says:

"The day must come when the suppression of the gonococcus shall rank in sanitary importance with the destruction of the mosquito; when the culture beds of the 'red light district' shall be looked after as carefully as the drainage of stagnant and polluted waters."

Not alone should we work in our societies, but as individuals, to bring to pass a reasonable law for the inspection of venerites; if at no other time than just previous to marriage.

Such being the case it would now seem to be the place and the time for an organization of physicians, as powerful as is ours, to compel through proper laws so carefully drawn as to make them absolutely sure, a registration with the local health authority or with the State Board of Health, of all cases of this nature, so that when a father wishes to ascertain the health of the young man his daughter is to marry, proper means for obtaining this information may be at hand. The efforts of those who have made such attempts in New York city should be encouraged to the limit, notwithstanding the arguments presented against the undertaking. It is a reflection upon us, if we allow the Church to hasten the enactment of such laws while we sit idly by and see their efforts crowned with success, or fail to do our duty by not holding out a helping hand and thereby see them go down to defeat.

By this means if the punishment were severe enough, each case would eventually be registered, at first by locality, and eventually throughout the whole State, and then later through all the States.

When a law of this sort is to be drafted, consideration and care must also be given to the itinerant drug store practice by prohibiting under heavy penalty the sale of drugs and articles in the treatment of these diseases, save on the prescription of a duly licensed physician.

Some will undoubtedly say that this tends to hasten the millennium in the practice of medicine along certain lines, and in answer to these can we but say that we are trying to limit these diseases in the same manner as attempts are now being made by the labor bureau to limit the so-called occupational diseases, by the health bureau to limit tuberculosis, smallpox, bubonic plague and the like.

That we may compel ourselves and all other supposedly enlightened physicians to be more painstaking and accurate in our diagnosis and treatment of these diseases, and to begin a legal as well as a scientific protection of the manhood and womanhood of our State, is the object of this paper, and it has been put forth in the hope that our Society will initiate the means of eventually curtailing such diseases or keeping the infected ones apart from those who are clean.

In conjunction with the paper I wish to present the results of a communication sent to the Attorney-General of each State or Territory in the Union, whereby I had hoped to gain statistics which might be of value to the Society in any work which was undertaken along this line, and it has been a source of wonderment to me how little attention has been paid on the part of officials of certain States to the questions I have asked.

First: I have sought to ascertain those States which had a marriage law requiring the issuing of a license to one or both parties and on reference to the statistics it will be ascertained that there are some States in the Union which issue a license to one party alone; some only to the bride; and some only to the groom; while a few issue one joint license.

While the more recent laws which have been passed in various States require licenses to be issued incorporating statistics concerning both parties—among these is our own New York State law, passed in 1910, few contain questions of practical value to the subject at issue.

A second question which has been asked directly of the legal

authorities is as to whether a health certificate was demanded of one or the other party or of both, and if so, by whom was it furnished?

Iowa, through a recently enacted law passed this last Fall, requires a health certificate to be issued to both parties. In this law it states that a certificate shall be issued by a legally qualified practitioner of human medicine of the State of Iowa, who must certify that either or both parties entering into a marriage contract had been examined by him, or her, within the next preceding 30 days and was found free from mental or physical defect, etc.

Section 5 states that no person who has any contagious venereal disease as syphilis or gonorrhea shall be licensed to marry.

Section 6 prescribes that a violation of the provisions of this act shall be considered a misdemeanor—punishable by a fine of not more than \$500 nor less than \$100; or imprisonment in the county jail not to exceed 200 days; or both.

Section 7 provides that any physician making examinations under this act, who wilfully aids and abets the violation of it by knowingly making a false certificate, shall be guilty of a misdemeanor punishable by the revocation of his certificate to practice.

The State of Maine, in an act introduced March 20, 1913, and reported by a majority of the Committee on Medical Affairs and ordered printed in joint rules, contains practically the same provision wherein the health certificate of each party is filed with the clerk, or other official issuing marriage licenses; and that any party who, upon examination is aggrieved by the finding of the physician duly registered and residing in the State, may appeal to the County Medical Examiner of the county in which such party resides commorant. If the decision of the State Medical Examiner is against the party, an appeal may be taken to the Supreme Court by petition, stating the facts, which shall be served upon said Medical Examiner 14 days before the same can be entered in court and a hearing demanded. If the judge who hears the case deems that the questions presented are of sufficient importance, he may report the same or any part thereof to the law court to be heard and determined as by law now provided. This act also states that the county attorney of the county having jurisdiction shall appear

in behalf of the Medical Examiner, and further that the petition may be entered in court either in term or vacation. A further section requires that the one who issues a marriage license shall return these certificates to the Register of Vital Statistics, and these shall be filed and recorded in his office. While the last section provides the violation of this act knowingly, shall be punishable in practically the same way as in the Iowa requirements.

A third question asked was: Does the health law, defining contagious diseases, include gonorrhea and syphilis? Here, again, the State of Iowa has recently passed a bill declaring these two diseases as contagious and infectious diseases, and that they shall be reported to the local board of health. The means whereby this is done as stated in Section 2, is that after the 1st of January, 1914, every physician and surgeon practicing within the State shall report every case of such a nature coming to his knowledge during the infectious stage thereof within 24 hours, and that he shall make and keep a record of every such case, numbering each consecutively. The person so reported must state whether or not he has been previously reported to a local board of health in the State, and, if so, when, where, by whom, and under what number.

The report shall give certain other statistics including the probable source of the infection, but shall not disclose the name of the infected person.

Section 3 defines that any physician or surgeon called upon to treat professionally anyone infected with these diseases in the infectious stage, who fails to report the same within the prescribed time, shall be guilty of a misdemeanor, punishable by fine or imprisonment, and the State Board of Health may revoke his license. While Section 4 prescribes that any person afflicted with either of these diseases who shall knowingly transmit, or assume the risk of transmitting the same by intercourse with another person, shall be guilty of a misdemeanor, punishable by fine and imprisonment, and in addition shall be liable to the party injured in damages to be recovered in any court of competent jurisdiction.

The State of Vermont, by its Act No. 217, provides that the local health officer may require under the rules and regula-

tions of the State Board of Health, the isolation of persons and things infected with contagious or infectious diseases, and may, with the approval of the local board of health, provide suitable places for the reception of same, and, if necessary, furnish medical care and treatment for such sick person at their expense if of sufficient ability to pay, otherwise at the expense of the town or city. While No. 218, entitled "An Act to Prevent the Spread of Certain Infectious Diseases," requires in Section 1, that the superintendents, etc., in charge of all public institutions, which are defined, shall immediately report the name and other data concerning any charitable patient under observation, suffering from any venereal disease of any form, and, if possible, the date and source of contracting the same. Section 2 provides that physicians shall furnish the same concerning private patients, save that the name and address shall not be given.

Section 3 provides that such data shall not be accessible by the public, nor shall such records be deemed public records. Section 4 provides that the State Board of Health shall provide at the expense of the State, facilities for the free bacteriological examination of discharges for the diagnosis of gonorrhreal infections, and shall also provide certain medicines at cost for the treatment of the same. While relative to syphilis, the State Board shall make at the expense of the State, the Wasserman test or examine smears, and shall furnish the treatment known as "Salvarsan," or other accredited specific treatment at cost, but such diagnosis and treatment shall not be furnished until the record of data is forthcoming from the physician.

This, then, is the accomplishment on the part of the sound-thinking physicians in these States, to bring about an amelioration of the havoc wrought by these diseases. And once more I ask the time-honored and hackneyed question: "Is it not worth while for us to compel our legislators to recognize these facts as they should be presented?"

STATES.	Does marriage law require issuing of a license to one or both parties?	Is health certificate demanded of one or the other party? If so, by whom is it furnished?	Does health law defining contagious diseases include gonorrhea and syphilis?
ALABAMA.....			
ALASKA.....			
ARIZONA.....			
ARKANSAS.....			
CALIFORNIA.....	Requires license	No	No special mention
COLORADO.....	Yes	No	No
CONNECTICUT.....	Yes	No	No
DELAWARE.....	Yes	No	No
FLORIDA.....			
GEORGIA.....			
IDAHO.....	Yes—either party	No law	No
ILLINOIS.....	Yes—at her party	No	No
INDIANA.....	Yes—issued to both	No	
IOWA.....	Yes—issued to both	Yes—both parties	Yes—bill just passed
KANSAS.....	Yes	No	No
KENTUCKY.....			
LOUISIANA.....			
MAINE.....	Yes—both parties	Yes—both parties	No
MARYLAND.....	Yes—both parties	No	?
MASSACHUSETTS.....	Yes	No	No
MICHIGAN.....	Yes—both parties	No	No
MINNESOTA.....	Yes	No	No
MISSISSIPPI.....	Yes—to groom	No	No
MISSOURI.....	Yes—to groom, who usually names lady	No	No
MONTANA.....	Yes—both parties	No	No
NEBRASKA.....	Yes	No	No
NEVADA.....	Yes—either party	No	No
NEW JERSEY.....	Yes	?	?
NEW HAMPSHIRE.....	Yes—both parties	No	No
NEW MEXICO.....	Yes—both parties	No	No
NEW YORK.....	Yes—both parties	No	No
NORTH CAROLINA.....	Yes	No	?
NORTH DAKOTA.....	Yes	No	No
OHIO.....	Yes—both parties	No	No
OKLAHOMA.....	Yes—jointly	No	Yes
OREGON.....	Yes—both parties	No	No
PORTO RICO.....			
PENNSYLVANIA.....	Yes	No	No
RHODE ISLAND.....			
SOUTH CAROLINA.....			
SOUTH DAKOTA.....	Yes—either party	No	No
TENNESSEE.....	Yes—naming both	No	No
TEXAS.....	Yes	No	No
UTAH.....	Yes—both parties	No	No
VERMONT.....	Yes—to groom	No	Yes
VIRGINIA.....	Yes—to groom	No	No
WASHINGTON.....	Yes—both parties	No	No
WEST VIRGINIA.....	Yes—either party naming both	No	No
WISCONSIN.....	Yes	No	No
HAWAII.....			
WYOMING.....	Yes	No	No

STATE OF NEW YORK.
No. 1860.
IN ASSEMBLY.

Int. 1663.

March 12, 1913.

Introduced by Mr. Denny—read once and referred to the Committee on General Laws.

AN ACT to amend the domestic relations law, in relation to the issuing of marriage licenses.

The People of the State of New York, represented in Senate and Assembly do enact as follows:

Sect. 1. Chapt. 19 of the laws of 1909, entitled "An Act relating to the domestic relations law, constituting Chapt. 14, of the Consolidated Laws," is hereby amended by inserting after Sect. 13, 2 new sections to be known as Sections 13-A and 13-B, to read as follows:

13-A. Physician's certificate. No license to marry, referred to in the preceding section, shall be issued except after each party to the contract has presented to the license clerk a certificate from a doctor of medicine duly authorized to practice medicine in the State of New York, stating that said doctor of medicine has examined such applicant for a marriage license, and that said applicant is not afflicted with any venereal disease.

13-B. Procuring or issuing license by fraud, a misdemeanor. A person procuring such a license by fraud, false representation or pretense; a doctor of medicine issuing such a certificate knowing the statements therein to be untrue or without having examined the applicant; a license clerk issuing such a certificate knowing said certificate to be false and untrue or in violation of the provisions of this article; a person solemnizing a marriage knowing that the provisions of this article have not been complied with is guilty of a misdemeanor.

This act shall take effect immediately.

This bill was buried in committee!

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, AUGUST, 1913.

Deaths.

Consumption	14
Typhoid fever	4
Scarlet fever	0
Measles	0
Whooping-cough	3
Diphtheria and croup	0

Grippe	1
Diarrheal diseases	18
Pneumonia	0
Broncho-pneumonia	2
Bright's disease	15
Apoplexy	5
Cancer	16
Accidents and violence	7
Deaths over 70 years	28
Deaths under 1 year.....	33
 Total deaths	152
Death rate	17.89
Death rate less non-residents.....	14.59

Deaths in Institutions.

	Rosident.	Non-Resident
Albany Hospital	9	6
Albany County Jail	0	0
Child's Hospital	0	0
County House	1	1
Dominican Convent	1	0
Hospital for Incurables.....	0	0
Homeopathic Hospital	1	1
Hospital for Incurables	0	0
Little Sisters of the Poor.....	4	1
Penitentiary	0	1
Public Places	2	4
St. Margaret's House	2	4
St. Peter's Hospital	9	4
Austin Maternity Hospital	1	0
Albany Hospital, Tuberculosis Pavilion	2	3
Labor Pavilion	0	0
St. Vincent's Female Orphan Asylum	1	2
 Totals	33	27
Births	181	
Still births	13	
Premature births	5	

TUBERCULOSIS.*Bender Laboratory Report on Tuberculosis.*

Positive	7
Negative	9
 Total	16
Living cases on record August 1, 1913.....	310

Cases reported during August:

By card	14
Dead cases by certificate	4
	—
Total	18
Dead cases previously reported	10
Dead cases not previously reported	4
Died without report	1
Removed	4
Recovered	1
	—
	20
Living cases on record Sept. 1, 1913.....	308
Total tuberculosis death certificates filed during August.....	14
Out of town cases dying in Albany:	
Albany Hospital Camp	3
Albany Hospital	1
	—
	4
Net city tuberculosis deaths	10

BUREAU OF CONTAGIOUS DISEASE.
Cases Reported During August, 1913.

Typhoid fever	7
Scarlet fever	0
Diphtheria and croup.....	8
Chickenpox	1
Smallpox	0
Measles	0
Whooping-cough	0
Consumption	17
	—
Total.....	33

*Contagious Disease in Relation to Public Schools.
Schools Closed.*

Number of days quarantine for scarlet fever:

Longest..... 30 Shortest..... 30 Average..... 30

Number of days quarantine for diphtheria:

Longest..... 31 Shortest..... 10 Average..... 18½

Fumigations:

Houses.....	24	Rooms.....	83
Cases of diphtheria reported.....			8
Cases of diphtheria in which antitoxin was used.....			7
Cases in which antitoxin was not used.....			1
Deaths after use of antitoxin.....			0

BUREAU OF CONTAGIOUS DISEASE.
Cases Reported During July, 1913.

Typhoid fever	5
Scarlet fever	3
Diphtheria and croup	8
Chickenpox	4
Smallpox	0
Measles	6
Whooping-cough	0
Consumption	35
 Total.....	 61

Contagious Disease in Relation to Public Schools.

Schools Closed.

Number of days quarantine for scarlet fever:

Longest..... 25 Shortest..... 5 Average.. 13 6/10

Number of days quarantine for diphtheria:

Longest..... 46 Shortest..... 24 Average.. 34 2/8

Fumigations:

Houses.....	68	Rooms.....	299
Cases of diphtheria reported.....			8
Cases of diphtheria in which antitoxin was used.....			8
Cases in which antitoxin was not used.....			0
Deaths after use of antitoxin.....			3

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive	5
Initial negative	160
Release positive	6
Release negative	20
Failed	22
 Total.....	 213

Test of Sputum for Tuberculosis.

Initial positive	7
Initial negative	8
Failed	1
 Total.....	 16

BUREAU OF MARKETS AND MILK.

Public market inspections.....	22
Milk depots reinspected.....	22
Milk wagons examined	92
Unclean wagons, 5.	
Milk cans examined	50

Lactometer tests	212
Below standard, 5.	
Temperature tests	212
Below standard, 18.	
Fat tests	31
Below standard, 5.	
Sediment tests	20
Sediment found	20

MISCELLANEOUS.

Mercantile certificates issued to children.....	5
Factory certificates issued to children.....	7
Children's birth records on file.....	12
Number of written complaints of nuisances.....	62
Privy vaults	5
Closets	1
Plumbing	12
Other miscellaneous complaints	44
Cases assigned to health physicians.....	59
Calls made	132
Number of dead animals removed.....	704

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR AUGUST, 1913.—Number of new cases, 210; classified as follows: Dispensary patients receiving home care, 41; district cases reported by health physicians, 4; charity cases reported by other physicians, 47; moderate income patients, 93; metropolitan patients, 25; old cases still under treatment, 101; total number of cases under nursing care during month, 311. Classification of diseases for the new cases: Medical, 75; surgical, 12; gynecological, 5; obstetrical under professional care, mothers 44, infants 41; eye and ear, 1; infectious diseases in the medical list, 32. Disposition: Removed to hospitals, 7; deaths, 5; discharged, 3; visit by head obstetrician, 1; visits by attending obstetrician still remaining under care, 142.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 2; nurses in attendance, 3; patients carried over from last month, 0; new patients during month, 4; patients discharged, 3; visits by head obstetrician, 1; visits by attending obstetrician, 5; visits by students, 27; visits by nurses, 31; total number of visits for this department, 64.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,392; for professional supervision of convalescents, 426; total number of visits, 1,818; cases reported to the Guild by two health physicians and thirty-nine other physicians; graduate nurses 7, and pupil nurses 5 on duty.

Dispensary Report.—Number of clinics held, 82; new patients, 134; old patients, 339; total number of patients treated during month, 473. Classification of clinics held: Surgical, 14; nose and throat, 2; eye and ear, 10; Skin and genito-urinary, 9; medical, 13; lung, 8; dental, 0; nervous, 0; stomach, 3; children 14; gynecological, 9.

ALBANY MEDICAL COLLEGE.—The Introductory Lecture of the Eighty-third Session of the Albany Medical College was delivered by Professor Howard Van Rensselaer, in the Amphitheatre of the College, on Tuesday, September 23, 1913.

NEW YORK STATE BULLETIN, DIVISION OF COMMUNICABLE DISEASES, JULY, 1913, gives the following report: Tuberculosis, an increased number of cases reported; cancer, forty-seven cases reported; diphtheria, slightly decreased; scarlet fever, greatly reduced in prevalence; measles, decreased over fifty per cent during July as compared with the previous month; typhoid fever, an increased prevalence; cerebrospinal meningitis, three cases; poliomyelitis, a slight increase; smallpox, fewer cases; ophthalmia neonatorum, six cases; pneumonia, a decreased number; whooping cough, slight decrease; tetanus, no cases; pellagra, two cases.

This report does not include New York City cases.

UNITED STATES CIVIL SERVICE EXAMINATION.—The United States Civil Service Commission announces an open competitive examination for chief bacteriologist, for men only, on October 6, 1913. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bacteriological Laboratory of the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at \$3,500 a year and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The duties of this position will be to direct all bacteriological and a portion of the fermentation work of the Bureau of Chemistry; to direct the work necessary in controlling the bacteriological purity of interstate shipments and importation of foods; to carry on all investigations of a bacteriological nature connected with the enforcement of the Food and Drugs Act and to carry on other investigations connected with the agricultural chemical work carried on by the Bureau of Chemistry.

Competitors will not be assembled for examination but will be rated upon the following subjects, which will have the relative weights indicated:

Subjects.	Weights.
1. General education and scientific training.....	40
2. Practical experience and fitness.....	30
3. Publications along bacteriological or pathological lines	30
 Total.....	 100

An educational training equivalent to that required for an M. D. or Ph.D. degree from a college or university of recognized standing, and at least seven years' practical experience in bacteriological and pathological work involving original investigations, since receiving such degree, are pre-requisites for consideration for this position.

Statements as to training, experience and fitness are accepted subject to verification.

Applicants must have reached their thirtieth but not their fiftieth birthday on the date of the examination.

Under an act of Congress applicants for this examination must have been actually domiciled in the State or Territory in which they reside for at least one year previous to the date of the examination.

Recently the Commission has obtained an appropriation whereby it is now able to have as examiners on various scientific, technical, and professional subjects men who are recognized authorities in such subjects. In passing upon the qualifications of candidates in this examination the Commissioner will have the assistance of an expert examiner who has been thus secured.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for form 304 and special form to the United States Civil Service Commission, Washington, D. C. No application will be accepted unless properly executed and filed with the Commission at Washington with the material required, prior to the hour of closing business on October 6, 1913. In applying for this examination the exact title as given at the head of this announcement should be used.

AMERICAN PROCTOLOGIC SOCIETY.—At the fifteenth annual meeting of the American Proctologic Society, held in Minneapolis, Minn., June 16th and 17th, 1913, the following papers were read:

"Proctology and Proto-Enterology," Dr. Louis J. Hirschman; "Memoir of James P. Tuttle" and "Memoir of Louis Straus," Dr. Joseph M. Mathews; "A Review of Proctologic Literature from March, 1912 to March, 1913," Dr. Samuel T. Earle; "A Method of Operating on Fistula Without Cutting Muscular Tissue," Dr. Rollin H. Barnes; "Report of a Case of Fecal Tumor Associated with Hirschsprung's Disease," Dr. Alois B. Graham; "A Further Consideration of Sir Charles Bell's Operation for Internal Hemorrhages," Dr. Alfred J. Zobel; "Deductions Based

on An Analysis of 3,000 Rectal Cases," Dr. T. Chittenden Hill; "Personal Reminiscences Upon the Subject of Proctology," Dr. Joseph M. Mathews; "Z-Plastic Operation for Anal Stricture," Dr. William M. Beach; "Sphincteric Atrophy," Dr. Ralph W. Jackson; "Further Observations On the Surgical Anatomy of the Large Bowel," Dr. Granville S. Hanes; "The Ano-Rectal Line, Its Clinical Significance," Dr. Collier F. Martin; "Further Observations On Pruritus Ani; Its Probable Etiological Factor, Results of Treatment," Dr. Dwight H. Murray; "Treatment of Fistula-in-Ano," Dr. J. A. MacMillan.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The regular meeting of the Medical Society of the County of Schenectady was held at the Glenridge Sanitarium, Tuesday, September 9, 1913, at 3:00 P. M.

Dr. P. McPartlon read a paper on "Medical Clinic of Tuberculosis Hospital."

ALBANY HOSPITAL NURSE TRAINING SCHOOL.—The Class of Nineteen Hundred and Thirteen of the Albany Hospital Nurse Training School held their graduating exercises and reception at the Nurses' Home, Albany Hospital, Wednesday, September 17, 1913, at 3:00 o'clock.

LANE MEDICAL LECTURES.—The fourteenth course of Lane Medical Lectures was delivered by Sir Edward A. Schafer, Professor of Physiology in the University of Edinburgh, on September 3, 4, 5, 8 and 9, 1913, in Lane Hall, San Francisco, Cal.

The previous courses of lectures were given on the following subjects: "Surgery of the Brain" "Congenital Malformations, Aneurism and other Surgical Topics," "Diseases of the Heart," "Topics in General Surgery," "History of Physiology," "Social Aspects of Dermatology," "Diseases of the Rectum," "Dislocations and Fractures Involving Larger Joints," "Infection and Immunity," "Tropical Diseases," "Practical Hygiene Epidemics and Preventive Medicine," "A Consideration of some features of the Lymphatic System," "The Importance of Ophthalmology in its Relation to Systemic Diseases," "On Internal Secretion in General," "On the Thyro-parathyroid Glands," "On the Adrenal Glandular Apparatus," "On the Pituitary Body," "The Influence of Internal on Other Secretions."

PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—The Panama-Pacific International Exposition at San Francisco in 1915 will display in a most comprehensive manner the achievements and activities of mankind during the last decade. Live, working exhibits are especially desirable, showing not only actual products, but also models in operation to illustrate the apparatus and methods employed in arriving at the finished article. In the Domain of Liberal Arts the exhibit will be notably interesting and significant.

The wonderful developments in Medicine and Surgery make certain a display of the highest importance and which will be of great benefit to the human family. The mechanical side of surgery will be represented by a complete collection of instruments and appliances used in this important field of human endeavor. There will be shown the most intelligent modern methods employed in the prevention and mitigation of the ills which beset mankind.

These exhibits will be housed in the Palace of Liberal Arts. The exhibits must of necessity be selective in character because of the comparative limitation of space which, by reason of wider participation and the world's more extended productivity, will be more restricted than at previous International Expositions. This will emphasize the advisability of applying for exhibit space as soon as possible.

Attention is called to the keen interest manifested by both American exhibitors and Foreign Governments, which assures an exhibition of the most representative International character, Latin America and the Orient will take very prominent parts. Twenty-six foreign countries have already accepted the invitation of the President of the United States and thirty-five states have also accepted.

The opening of the Panama Canal means the development of entirely new avenues of commerce, the extent of which it is impossible to overestimate. The Orient and Latin America should prove large and profitable markets for the appliances and equipment of medicine and surgery.

SCHOOL FOR HEALTH OFFICERS, CONDUCTED BY HARVARD UNIVERSITY AND THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.—Beginning this fall, Harvard University and the Massachusetts Institute of Technology are to maintain in co-operation a School for Public Health Officers. The facilities of both institutions are to be available to students in the School and the Certificate of Public Health is to be signed by both President Lowell and President MacLaurin.

The object of this school is to prepare young men for public health work, especially, to fit them to occupy administrative and executive positions, such as health officers or members of boards of health, as well as secretaries, agents and inspectors of health organization.

It is recognized that the requirements for public health service are broad and complicated and that the country needs leaders in every community, fitted to guide and instruct the people on all questions relating to the public health. To this end, the instruction of the new school will be on the broadest lines. It will be given by lectures, laboratory work, and other forms of instructions offered by both institutions and also by special instructors from national, state and local health agencies.

The requirements for admission are such that graduates of colleges, or technical and scientific schools who have received adequate instruction in Physics, Chemistry, Biology and French or German, may be admitted to the school. The medical degree is not in any way a pre-requisite for admission, although the Administrative Board strongly urges men who

intend to specialize in public health work to take the degree of M. D. before they become members of the school for Health Officers.

The Administrative Board which will conduct the new school is composed of Professor William T. Sedgwick, of the Massachusetts Institute of Technology; Professor Milton J. Rosenau, of Harvard; and Professor George C. Whipple, of Harvard. Professor Rosenau, of Harvard, has the title of Director and the work of the school will be under his immediate supervision.

PERSONALS.—Dr. JAMES C. HASSALL (A. M. C. '10), is at the Government Hospital for the Insane, Washington, D. C.

—Dr. GEORGE B. RANDALL (A. M. C. '10), has opened an office at 132 Hudson Avenue, Albany, N. Y.

—Dr. LEO H. NEUMAN and Dr. HENRY L. K. SHAW, of Albany, returned from Europe July 30, 1913.

MARRIED.—Dr. C. W. LOUIS HACKER (A. M. C. '05), and Miss Lany Diefendorf were married at Watervliet, N. Y., on September 17, 1913.

—Dr. WILLIAM H. MASON (A. M. C. '11), of Gloversville, N. Y., and Miss Mary Brown, of Utica, N. Y., were married at Utica August 19, 1913.

DIED.—Dr. WALTER M. FLEMING (A. M. C. '62), of Mount Vernon, N. Y., a veteran of the Civil War and former Health Officer of Rochester, N. Y., died at his home September 10, 1913, after a brief illness, aged 75.

—Dr. WILLIAM B. HOSTETLER (A. M. C. '65), a member of the Illinois State Medical Society, for many years local surgeon of the Wabash system in Decatur, where he had practiced for 46 years, died at his home August 21, 1913, from heart disease, aged 70.

In Memoriam

WALTER M. FLEMING, M. D.

WALTER MILLARD FLEMING was born in Portland, Maine, June 13, 1838, the second son of Lorenzo Dow Fleming (at that time a clergyman and later a physician, who practiced in Canandaigua and Rochester, N. Y.) and Margaretta Rich. He lived for a while there, moved to Newark, N. J., thence to Canandaigua, finally Rochester. He graduated from the Albany Medical College in 1862 along with Dr. Vander Veer and Dr. Bendell. He had practiced previous to his graduation, and was surgeon to First Cavalry in 1858; surgeon in the old N. Y. 13th Regiment in 1861, and was for some time city physician for Rochester. He married Dolly Margaretta Spencer; the issue being Walter Spencer Fleming and Charles Putnam Fleming. The family removed to New York City in 1869. He there entered into active general practice and became con-

nected with St. Frances Hospital, later he practiced extensively among members of the theatrical profession and was one of the first physicians connected with "The Actors Fund of America." His practice was active up to April, 1909, when he had an apoplectic stroke. He suffered from another similar attack July 4th, 1909. After recuperating from this attack he retired to the residence of his elder son at Mt. Vernon, N. Y. He lived a quiet uneventful four years there, when a chronic nephritis, arterio sclerosis and myocarditis preyed upon his vitality to such an extent that he was confined to his bed and after about three months of suffering he passed away during a uraemic convulsion—this being the fourth one within two months.

He joined the National Guard in 1870 and was surgeon of the Third Brigade staff with rank of colonel, and became major before resigning about 1885 or 1886. He was very active in Masonry—being prominent in all the branches—was a member of N. Y. Lodge, No. 330; Lafayette Chapter, No. 207; Adelphic Council, No. 7; Past Eminent Commander Columbian Commandery, No. 1; did yeomans work in the Scottish Rite, was made a thirty-third degree Mason in 1878; was, with W. J. Florence, of historic fame, founder of the Ancient Arabic Order, Nobles of the Mystic Shrine in 1872, the first temple of which (Mecca) he was potenteate of for seventeen years and Imperial potenteate of the order for twelve years. He was formerly a member of the New York County Medical Society, the American Medical Association, the Medico-Legal Society, New York State Medical Society, and at one time was president of the Alumni Association of the Albany Medical College; for many years and to his death he was a member of the New York Physicians' Mutual Aid Association, the Royal Arcanum and Knights of Honor.

Years ago he was president of the Waverly Boat Club, West Fifty-seventh Street and North River, and was for forty years a member of the Olympic Club at Bay Shore, L. I., which, by the way, went out of existence two weeks before he died. His grandfather, father, brother, sister and brother-in-law were physicians—all being now dead. He is survived by two sons—Walter S. Fleming, M. D., of Mt. Vernon, N. Y., and Charles P. Fleming, of New York City, who is a hotel manager.

He died on September 9, 1913. The funeral service, religious, and the beautiful Rose Croix service of the Scottish Rite was held on September 11th and the burial was in the family plot at Kensico cemetery, New York, on September 12th, 1913.

WILLIAM BENTON HOSTETLER, M. D.

Dr. WILLIAM BENTON HOSTETLER died at his home, 250 West Prairie Avenue, Decatur, Ill., August 21, 1913, after an illness of two days. A recent attack of heart trouble was the cause of his death. He was seventy years of age.

Dr. Hostetler was one of the oldest practicing physicians in the city and had practiced in Decatur for forty-eight years. He was a member

of the Medical Association and also a member of the Central Church of Christ. He was also a Knight Templar and was a very active man in the Masonic order.

For about fourteen years he was surgeon for the Wabash Railroad in Decatur and gave this position up about twelve years before his death, when he had his first serious illness. In his practice as a physician, he made many friends.

Dr. Hostetler was born in Bedford, Ind., June 15, 1843. He went to Decatur in 1854 with his parents when he was eleven years old. At that time the street had not been laid out, but when it was, this site became that of the present home. His father died there in 1858.

Dr. Hostetler attended the public schools of Decatur and was a graduate of the old Decatur high school. In 1861 he went to Michigan University where he remained for three years. Then he attended the Albany Medical School at Albany, N. Y., where he was graduated in 1865. His father was also a graduate of this school.

After his graduation, he returned to Decatur and went to Argenta, where he remained a year. He began practice in that town and then in Decatur and opened an office. This was forty-eight years ago and since that time he has practiced in Decatur. He was not associated with any other physician.

In 1884, Miss Minnie I. Waggoner and Dr. Hostetler were married.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

Diseases of the Eye, a Handbook of Ophthalmic Practice for Students and Practitioners by G. E. DESCHWEINITZ, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital; Consulting Ophthalmic Surgeon to the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital; Ophthalmologist to the Orthopaedic Hospital and Infirmary for Nervous Diseases. With 360 illustrations and seven chromo-lithographic plates. Seventh edition. Thoroughly revised. Philadelphia and London, W. B. Saunders Company, 1913.

Numerous additions to this popular book bring it strictly up to date. The volume is deserving of praise because of the concise statement of facts and comprehensive discussions of the theories regarding some of the obscure eye diseases. We wish the illustrations were more numerous and that more photographic reproductions were used instead of the antiquated cuts. The general approval of the author's work, which for years has been one of the standards, is expressed in the rapid sale of the six previous editions.

The publishers present an attractive work of 379 pages carefully bound and easily handled. The new treatise is of the greatest value so that we unhesitatingly recommend it to all interested in eye work, the medical student, practitioner or specialist.

A. J. B.

The Difficulties and Emergencies of Obstetric Practice. COMYNS BERKELEY, M. A., M. D., B. C., Cantab., F. R. C. P., Lond., M. R. C. S., Eng. Obstetric and Gynecological Surgeon to the Middlesex Hospital; Surgeon to In-Patients, Chelsea Hospital for Women; Senior Obstetric Surgeon, City of London Lying-In Hospital, etc., and VICTOR BONNEY, M. S., M. D., B. Sc., Lond., F. R. C. S., Eng., M. R. C. P., Lond., Assistant Obstetric and Gynecological Surgeon to the Middlesex Hospital; Lecturer on Practical Obstetrics, Middlesex Hospital Medical School; Late Hunterian Professor Royal College of Surgeons of England, etc. Octavo with 287 original illustrations. Cloth, \$7.50. P. Blakiston's Son & Co., Philadelphia, 1913.

The title suggests the practical nature of the work. Purposely the physiology and management of pregnancy, labor and the puerperium have been omitted and the seven-hundred-odd pages devoted to the abnormalities caused by or associated with the pregnant and parturient states.

The usual obstetric complications such as hemorrhage, infection, extra-uterine pregnancy and dystocia are considered not only fully but with unusual care to present clear clinical pictures of the conditions that, in the individual case, accurate diagnosis can be arrived at and intelligent treatment applied. Associated disorders of the skin, respiratory and digestive systems, the less serious disorders of the urinary tract and the like are similarly treated.

Among the important subjects discussed at greater length, even than in the larger works of reference, are to be mentioned sub-involution of the uterus, pyelonephritis, retention of urine, post-partum hemorrhage and puerperal insanity.

The practical method of discussing various operative procedures is well illustrated in the presentation of the general subject of Version, the subject matter pertaining to which is paragraphed as follows: Indications; Varieties; Methods; Comparison of Methods; Difficulties; Dangers; Contra-indications; Preliminary Considerations. Internal Podalic Version is similarly discussed, e.g., When the Head Presents; Time of Operation, Position of Mother, Position of Operator, Steps of Operation; When the Shoulder Presents; Difficulties; Dangers.

The work represents essentially the views and the methods of treatment of the authors. Therein lies its worth; for the unusual clinical facilities at the disposal of the writers and their wide experience make it possible

for them to speak with authority. It means much more to the practitioner, when confronted by any of the perplexing emergencies of obstetric practice, to be told authoritatively what to do rather than be told how many and what procedures could be carried out.

The work is conveniently chaptered and paragraphed and abundantly supplied with original semi-diagrammatic illustrations and is a worthy addition to the growing obstetric literature. It is invaluable to those who assume the responsibilities of present-day obstetric practice.

P. T. H.

Golden Rules of Diagnosis and Treatment of Diseases. HENRY A. CABLES, B. S., M. D., Professor of Medicine and Clinical Medicine of the College of Physicians and Surgeons, etc. St. Louis. Second edition; revised and rewritten. 318 pages. Cloth, \$2.25. C. V. Mosby Co., St. Louis, 1913.

To quote from the title page, the work consists of "aphorisms, observations and precepts in the method of examination and diagnosis of diseases, with practical rules for remedial procedure." Current literature and standards works of reference have been consulted and personal experience in practice and in teaching drawn from in compilation of the subject matter.

In that complete clinical pictures of diseases, with which he is familiar, have been omitted and for them an abundance of practical points in diagnosis, prognosis and treatment substituted, the work is superior to the familiar hand-book or quizz-compend for the busy practitioner or advanced student of medicine.

A Reference Hand-Book of Gynecology for Nurses. By CATHARINE MACFARLANE, M. D., Gynecologist to The Woman's Hospital, of Philadelphia. Second edition, thoroughly revised. 32 mo of 156 pages, with original line-drawings. Philadelphia and London: W. B. Saunders Company, 1913. Flexible leather, \$1.25 net.

The work is a valuable guide to the nurse in preparing the patient for the various gynecological examinations; it considers the preparation of the room and patient for, the supplies needed in, and the essential steps of the different major and minor gynecological operations; and fully describes ante- and post-operative treatment.

Essential anatomy, physiology and pathology are concisely given.

The work is unusually complete, abundantly illustrated and attractively bound in leather making a compact volume of 148 pages.

Diet Lists of the Presbyterian Hospital, New York City. Compiled, with notes, by HERBERT S. CARTER, M. D., Assistant Visiting Physician to the Presbyterian Hospital, Associate in Medicine at Columbia University, etc. 12 mo of 129 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.00 net.

The work is designed to serve as a handy reference where accurate diet lists or particular dietetic receipts are required. Explanatory notes have been added freely in an attempt to emphasize the principles underlying the therapeutic use of foods.

The subject is an important one to which too little attention often is paid.

This particular book is in no sense a treatise on dietetics; it is entirely practical and of definite value.

SURGICAL PATHOLOGY

Edited by George E. Beilby, M. D.

Morphological Changes in Tissues with Change in Environment. Changes in the Gall-Bladder Following Autoplastic Transplantation into the Gastro-intestinal Tract.

Geo. MILTON SMITH. *Journal of Medical Research, March, 1913. Vol XXVII, No. 4.*

With the development of various methods of tissue and organ transplantation, the behavior of the transplanted cells under new conditions of environment has become increasingly an object of study. In this way the viability and the function of various transplanted tissue has been determined; and, consequently, the conditions favoring, on the one hand, continued growth, and, on the other, the ultimate destruction of such tissues have become better understood. Smith in this article records the results of a series of experiments and of his study of the subject. He first reviews the literature of the work already done; then considers the previous observations of changes in the histology of the gall bladder in communication with the intestinal tract, and, lastly, records the results of his own experiments. The animals which Smith used in this work were the dog, cat and opossum. The experiments aimed at studying early and late stages especially in completely transplanted gall-bladder tissue when the transfer of tissue had been made not alone into the small intestine, but also into the large intestine and the stomach. The technic employed was that commonly used in the performance of anastomosis between the gall-bladder and the intestine by the suture method. In the second operation the abdomen was again opened, the cystic duct ligated and divided, and the gall-bladder severed from its attachment to the liver. The tissues of the fundus of the gall-bladder, now firmly united to the intestine at the point of anastomosis, obtained an entirely satisfactory blood supply from the intestinal wall. The gall-

bladder was cut down to a piece corresponding to about one-third to one-half of its original size. The open end of the gall-bladder was then inverted and closed by a double layer of silk sutures, so that, when the operation was completed, a gall-bladder diverticulum was formed which communicated directly with the intestinal tract.

The author believes that changes in the gall-bladder after autoplasic transplantation into the gastro-intestinal tract should be regarded as tissue adaptation to new conditions of environment, much the same order as the changes noted by Carrel and Guthrie which occurred in the wall of a vein when transplanted between the divided ends of an artery.

He finally concludes that autoplasic transplantation of the tissues of the gall-bladder into the gastro-intestinal tract is followed by definite histological changes as a result of adaptation of the transplanted tissue to new environment; that gall-bladder tissue transplanted into the gastro-intestinal tract undergoes hypertrophy of the mucosa with development of new lymphoid tissue. When transplanted into the stomach, the hypertrophy of gall-bladder mucosa may become especially marked, and be associated with active proliferation and degeneration of the transplanted cells with mucous production.

That the increase in lymphoid tissue developed in the gall-bladder transplanted to the surface of the intestinal tract, whereas a considerable decrease of lymphoid tissue occurs in gall-bladder transplanted into the sterile peritoneal cavity, affords evidence that the development of lymphoid tissue is in response to bacterial environment and possibly to other chemical or mechanical causes injurious to the tissue.

That there is no experimental evidence that a metaplasia occurs in gall-bladder tissue in fistulous communication with the intestinal tract, such as has been described as taking place in the human gall-bladder under similar conditions.

The Nature of Anaphylaxis, and the Relations between Anaphylaxis and Immunity. RICHARD WEIL. *The Journal of Medical Research*, March, 1913. Vol. XXVII, No. 4, p. 497.

In spite of the striking difference between the manifestations of anaphylaxis and of immunity, there are many facts which indicate that they are closely related phenomena. Thus, a guinea-pig, by virtue of a single injection of an alien proteid, becomes hypersensitive towards that proteid, but, by frequent repetition of the same, becomes immune thereto. An immunized guinea-pig, on the other hand, possesses a serum which, when injected even in minute amounts into a normal guinea-pig, renders the latter highly hypersensitive to the specific antigen in question. The author discusses the two important theories in which attempt has been made to unify the phenomena of anaphylaxis and of immunity, and to explain them upon a single basis. The first of these maintains that the anaphylactic reaction is intracellular; the second, which has now very largely dispensed the former in the literature, maintains that the reaction

is entirely humoral. The difference between these two conceptions is, as Weil states, fundamental, and the determination of the correct view is of first importance for the whole subject of immunity. He then considers each of these theories briefly, namely, the cellular and the humoral.

It therefore seemed important to the author to verify experimentally the conception that the incubation period necessarily accompanies passive sensitization. An experiment was therefore planned in such a manner that a series of animals received a wide range of combinations of these two factors—antigen and antibody being given simultaneously; in another series the same combinations were employed, but the injections of antibody and of antigen were separated by a time interval. In the former case anaphylaxis failed to supervene; in the latter, it invariably occurred.

His study has been exhaustive and covers a very wide range. His experiments seem to demonstrate that immunized animals are also potentially anaphylactic. In the terms of the theory herein supported their body cells contain sessile receptors, or anchored antibodies, in sufficient number to produce an anaphylactic reaction, but are protected by the free antibodies of the serum.

Summary of Experiments.—1. It has been impossible to produce anaphylactic shock in guinea-pigs by injecting antigen and antibody simultaneously. For sensitization to occur, an interval of time must elapse between these two injections.

2. No qualitative changes have been shown to take place in the introduced immune bodies during this interval.

3. Quantitatively, it has been shown that there is a marked diminution in the circulating antibodies in the blood during this interval.

4. It has been shown that in spite of the disappearance of the antibodies from the blood, they persist in the body, as is shown by the persistence of the induced anaphylactic state.

5. By previously saturating the guinea-pig with normal rabbit serum, it has been possible to prevent sensitization by means of immune rabbit serum.

6. Guinea-pigs that had been either actively or passively sensitized were protected against anaphylactic shock by introducing into their blood large amounts of immune body.

7. Guinea-pigs that had been immunized, in the popular acceptation of that term, by the frequently repeated injection of antigen, were shown to be potentially anaphylactic.

Conclusions.

1. Anaphylaxis is due to the reaction between specific antibodies present in the cells and the introduced antigen.

2. In passive sensitization, the body cells absorb the introduced antibodies from the blood, and the animal is thus made anaphylactic.

3. The function of immune bodies present in the serum is to neutralize the introduced antigen, and so to protect the body cells.

4. The anaphylactic animal regularly contains in his circulation an insufficient quantity of antibodies to protect his body cells.

5. The immunized animal is potentially anaphylactic. His body cells possess anchored immune bodies, but are protected by those in circulation.

6. Exactly the same antibodies are present in anaphylaxis as in immunity. In the former they predominate in the cells—in the latter, in the serum.

The Leukocytic Inclusions of Dohle.

W. T. CUMMINS. *The Journal of Medical Research*, March, 1913. Vol. XXVII, No. 4.

Diligent scientific work has been carried out in the investigation concerning the etiology of scarlet fever. Examinations of the lymph nodes, pharynx, skin, and blood have been made and from time to time a new etiological factor has been suggested. Streptococci may play some part in the production of the disease. The most recent suggestion has been offered by Prof. Dohle, of the Pathological Institute at Kiel, who upon examining the blood smears of thirty cases found within the cytoplasm of the neutrophilic polynuclears multiform bodies staining somewhat less darkly than the nuclei. These were found in a large percentage of polynuclears in all except two cases, which were examined late in the disease. There has been already some confirmatory work by other authors, namely, Kretschmer, of Strassburg, examined thirty scarlet fever cases and all showed inclusions. In one he found them a day prior to the eruption, but the largest numbers were found during the first four days of the eruption.

In the Research Laboratory, New York City, Nicoll and Williams, using the Manson and Giemsa stains, found inclusions in forty-five of fifty-one scarlet fever cases, who had been ill longer than eight days. Kolmer, at the Philadelphia Hospital for Contagious Diseases, examined 216 cases of scarlet fever and confirmed the work of his predecessors. He also in diphtheria, sepsis, erysipelas, empyema and pneumonia reported positive findings. Franken of Halle examined 12 scarlet fever cases and found nine positive. In numerous other morbid processes and in normal people he failed to find inclusions. He considers that they are of diagnostic value. Some authors report that the examination of the blood of a series of normal children shows in many of them the presence of the inclusions. When a febrile condition intervened the inclusions materially increased in numbers. They consider that these are not "pathognomonic" of disease—certainly not of scarlet fever.

The author records his personal observations which were briefly as follows. In 155 examinations of 95 febrile and 26 afebrile cases, 17 normal individuals and 16 laboratory animals, which were suffering from typhoid fever (17 cases), scarlet fever (15 cases), tuberculosis (14 cases), croupous pneumonia (4 cases), mumps (4 cases), local sup-

puration (4 cases), and various other diseases, in each case 100 neutrophiles were examined, except for typhoid fever, in which fifty cells were examined.

The results of his investigation show that the so-called inclusion bodies are to be found in practically all febrile diseases and that they, in some cases, persist in decreasing numbers well into convalescence; in pyogenic conditions (chronic) of afebrile character; in severe injuries without febrile disturbance and in some normal individuals. They are apparently absent in laboratory animals. A nuclear origin seems probable. The alleged specificity to scarlet fever has not been corroborated.

Hexamethylenamin in the Treatment of Systemic Infections with a Special Emphasis upon its Use as a Prophylactic.

S. J. CROWE. *Bulletin of the Johns Hopkins Hospital, Vol. XXIII,*
No. 259.

The suggestion that hexamethylenamin be used in the treatment of systemic infections is based entirely on the results of experimental and clinical observations. The object of the author of this publication has been to call attention to the fact that this drug is of value not only as a therapeutic but especially as a prophylactic measure in a great variety of maladies. Among the conditions which he states may be favorably influenced by the administration of hexamethylenamin the following he mentions as more important:

- (1) Infections of the genito-urinary tract and typhoid bacilluria.
- (2) Infections of the bile ducts and gall bladder.
- (3) Infections of the cerebro-spinal system, poliomyelitis, epidemic meningitis, meningeal infections following injuries or infectious processes elsewhere in the body.
- (4) Infections of the respiratory tract, including infections of the para-nasal sinuses and ears, acute rhinitis, acute tonsillitis, and some forms of bronchitis. (In lobar pneumonia and pulmonary tuberculosis it is doubtful whether this drug is of any value.)

In the year 1908 the experimental studies carried out in the pharmacological laboratory of the Johns Hopkins University discloses the fact that this drug is not excreted by the kidneys alone but that within a short time after its administration by mouth it may be demonstrated in practically all of the body fluids. Following this experimental work some investigations made on clinical cases in which it was possible due to the presence of a post-operative biliary fistula to make cultures and obtain specimens of bile directly from the interior of the gall-bladder, disclosed the following facts:

- (1) Hexamethylenamin, given either by mouth or by rectum, makes its appearance in the bile and in the urine almost simultaneously.
- (2) Provided large doses of hexamethylenamin are given, at least 75

grains a day, this drug appears in the gall-bladder in a concentration which suffices to render the bile an unsuitable media for the growth of bacteria. During the last four years the author states that their investigations have been chiefly directed toward the experimental and clinical study of the value of hexamethylenamin in threatened or actual cerebro-spinal infections. There are a great variety of conditions such as compound fracture of the skull, infections of the scalp and acute infections of the ear or accessory nasal sinuses, or certain operative procedures which may be followed by an infection of the cranial cavity in which it is especially desirable to have some measure for combating the secondary infection of the meninges.

The author states that since 1908 it has been a routine measure in the Johns Hopkins Hospital to administer hexamethylenamin to all cases in which a meningeal infection is a possible or threatened complication. Quite an extensive series of such cases have been studied during the past three years, and the results seem to definitely establish the therapeutic and prophylactic importance of this drug. This series includes cases of:

- (1) Compound fracture of the skull.
- (2) Tumors of the hypophysis with neighborhood symptoms necessitating operative procedures through the nose.
- (3) Post-operative cerebro-spinal fistulae.
- (4) Infections of the ear and para-nasal sinuses.
- (5) Acute poliomyelitis.

While the author is not able to state definitely in all cases the actual value which has been obtained from the use of the drug the results would clearly indicate that it is a therapeutic and prophylactic measure of great importance in the treatment of these various conditions. In conclusion he states that although there are undoubtedly certain individuals who have a personal idiosyncrasy for hexamethylenamin, and even a small dose may cause uncomfortable symptoms—such as a skin rash, catarrh of the mucous membranes, gastric or urinary irritation—this fact does not invalidate the use of the drug. Aside from personal idiosyncrasies the author's experience has been that untoward symptoms usually arise as a result of insufficient dilution, and such symptoms have invariably disappeared on withdrawing the drug and producing active diuresis by forcing liquids.

Undescended Coecum in the Sub-Hepatic Position.

JOSEPH MARSHALL FLINT. *Bulletin of The Johns Hopkins Hospital.*
Vol. XXIII, No. 259.

This case which the author reports illustrates the importance of embryology in the interpretation of pathological conditions met at operations. As he states many pathological states have for their sole explanation the persistence of foetal stages of development, where an

arrest of the usual process of individual evolution has taken place. Many anomalies of the gastro-intestinal tract can be explained only on this basis as the following case of Flint's shows.

The patient was a woman aged 38, who had suffered for nine years from typical gall stone colic, and physical examination of the abdomen was negative with the exception of a small hard mass in the region of the gall bladder. The abdomen was opened through a Kocher incision and the interesting anomaly was observed. The coecum was found to lie just beneath the liver in the usual position of the hepatic flexure with an infantile type of appendix which was found to lie under the coecum and curled up so that its tip lay beside the fundus of the thickened and adherent gall bladder. Stretching over the coecum was a thin veil which extended from its own surface and was continuous with the omentum. There was no ascending colon, the coecum forming the right end of the transverse colon with which the omentum was fused in the usual manner. The gall bladder was much thickened and adherent to the coecum, stomach and duodenum, and filled with stones. The author believes that the condition presented by his patient is to be found in the state of arrested development of the intestines following the rotation of the gut leaving the coecum in a sub-hepatic position. No ascending colon was present, therefore the coecum had formed a cul-de-sac on the hepatic end of the transverse colon occupying the position about the usual site of the hepatic flexure. Spreading over the coecum was a typical membrane such as has been described by Jackson and variously termed Jackson's veil or membranous peritonitis. This membrane was continuous with the omentum and gradually and insensibly passed on from a typical veil into a typical omentum.

An Aid for the Diagnosis of Conditions Associated with an Obstruction to the Outflow of Blood from the Brain; with Special Reference to Sinus Thrombosis of Otic Origin.

S. J. CROWE. *Bulletin of the Johns Hopkins Hospital, Vol. XXIII, No. 261, November, 1912.*

The author first describes the two main pathways by which the venous blood is returned from the brain by the symmetrically placed lateral sinuses, jugular bulbs, and internal jugular veins, as well as the collateral circulation in case of obstruction to the outflow of blood through either of these main pathways, and he further illustrates this by a diagram showing the intracranial and extracranial venous systems and their anastomotic vessels. In the beginning he states the fact that if there is sufficient obstruction to the outflow of blood through the intracranial system these anastomotic vessels will become engorged with blood. At least two of these vessels, the supraorbital and ophthalmic veins, can be seen on the surface of the skin. On the other hand the

retinal veins are the only branches of the intracranial venous system which can be directly observed. These vessels, however, as he states, may be studied very conveniently with the aid of an electric ophthalmoscope.

Stasis in the intracranial venous system, as may be produced by compressing both internal jugular veins, will immediately manifest itself by a dilatation of the veins of the fundi. As the stasis increases the anastomotic vessels will also begin to dilate. If the pressure on the right jugular vein is suddenly released, but that on the left is still maintained, or vice versa, it will be observed that the distended veins in the fundi and in the skin immediately collapse and return to their normal size. This is to be explained by the fact that in normal individuals the connections between the two internal jugulars are so free, that one side alone may be occluded without producing any marked evidence of stasis. If it were otherwise one would expect to find evidence of stasis in the eye-grounds in every case of sinus thrombosis. But such is not the case.

The author's experience has led him to conclude that any acute obstruction to the outflow of blood through the sigmoid sinus, jugular bulb or internal jugular vein on one side may be diagnosed by means of the following test. This test is based on purely mechanical principles.

From the examination of 50 normal individuals the author has arrived at the following conclusions:

1. No appreciable evidence of stasis is seen in the retinal or supra-orbital veins when one internal jugular is compressed with the finger.
2. Pressure on both internal jugular veins at the same time produces a marked dilatation of the veins of the fundi and of the anastomotic vessels connecting the intracranial with the extracranial venous circulation.
3. When the pressure is suddenly released on one side, while it is maintained on the other, the engorged veins of the anastomotic system and the fundi will immediately empty.

Crowe states that if the results in any individual case differ markedly from those above, it must be concluded that there is either an anomaly of the intracranial venous circulation, or some pathological condition, which is obstructing the outflow of blood from the brain.

Among the clinical conditions which may be associated with an obstruction to the outflow of blood from the brain, the formation of a thrombus in the sigmoid sinus, secondary to an infection of the middle ear is by far the most frequent and the most important. Sinus thrombosis appears with equal frequency as a complication of acute and chronic cases of otitis media, and not infrequently the diagnosis offers great difficulty. Due to the anatomical position of the jugular bulb to the middle ear, it is possible to have a primary bulb thrombosis, with the sigmoid and transverse sinuses normal in appearance; and the condition may not be recognized, even at an exploratory operation. One of the cardinal symptoms of sinus thrombosis is a remittent fever

with chills; due to the serious nature of the malady, however, it is desirable to know at an early stage of the disease whether the symptoms are really due to a sinus thrombosis, or to other conditions, such as: angina, pneumonia, malaria, the initial stage of one of the infectious diseases of children, meningitis or brain abscess.

As the author has already stated, no normal person has as yet been observed by us in whom the compression of one jugular alone produced any marked degree of stasis in the retinal veins. On the other hand, in all normal individuals, a quite evident dilatation of these vessels results when simultaneous pressure is made on both sides of the neck. Since a sinus thrombosis offers a more or less complete obstruction to the outflow of blood into the internal jugular vein on the same side, it naturally follows that in such cases there will be unmistakable evidence of stasis as a result of compressing, with the finger, the internal jugular vein on the opposite side. When it is possible to examine a patient before the onset of complications and find that both jugular veins are patent, and at a later period, associated with an elevation of temperature find that the blood is not passing down one side of the neck as freely as down the other, the author states that his observations have led him to believe that this sign may be taken as positive evidence that there is a sinus thrombosis.

The Effect of Hypersensitiveness to a Tuberculo-Protein upon Subsequent Infection with Bacillus Tuberculosis.

CHARLES R. AUSTRIAN. *Bulletin of The Johns Hopkins Hospital, Vol. XXIV, No. 263, January, 1913.*

The author's interest in this problem was brought about largely by a series of monographs by Romer (P. H. Romer: *Beitr. z. Klinik. d. Tuberk.*, 1908, XI, 79). In order to test the validity of his assertions that the hypersensitive state was responsible for the immunity the author carried on a large series of experiments on guinea pigs. The tuberculo-protein used for sensitization in experiments was made according to the modification of the technique as amended by Baldwin. Three strains of human type tubercle bacilli, H39, obtained from the Saranac Laboratory, and Ha and Hb, isolated from the sputa of two patients ill with tuberculosis, were used for the inoculations. The results of the experiments are far too exhaustive and technical to allow of summarizing but in the main it is clear that the evidence furnished by the various series of experiments demonstrated the fact that sensitization of tuberculo-protein had definitely diminished the resistance of the animals to infection with living bacilli of the human type. Mindful of the fact that tuberculous animals, though immune to re-infection with small numbers of bacilli, are less resistant to re-infection with larger numbers of the organisms, a second series of

guinea pigs with parallel series of control animals, were infected with similar doses of the strain of tubercle bacilli used in the preceding experiments. The findings in these are a confirmation of those already noted. Although the infecting doses of tubercle bacilli were small the already sensitized animals showed more extensive disease than did the non-sensitized controls. Rabbits which are relatively insusceptible to infection of the human type of tubercle bacillus were used also in a second series of inoculations, and the results were unique for so far as the author has been able to determine an acute lethal tuberculosis had not previously been produced in rabbits with a small infecting dose of human type tubercle bacillus. Several of the sensitized rabbits used developed a clinical picture described by Theobald Smith in rabbits inoculated with the bovine type of the organism. Eight of the sensitized animals developed dyspnea, and five died from tuberculosis within sixty-seven days after inoculation. In five sensitized and in two control animals, tubercles developed at or near the site of the intravenous inoculation.

For the present the following conclusion seems justified: Hypersensitivity produced in guinea pigs and in rabbits by sensitization with a protein obtained from the bacillus tuberculosis, human type, by water extraction, exerts a baneful or a neutral influence on a subsequent tuberculous infection. Whether or not a similarly produced condition of hypersensitivity would influence differently the course of infection with a very few organisms cannot be stated.

Subluxation of the Major Cornu of the Hyoid Bone (Dysphagia Val-salviana).

FRANKLIN HAZLEHURST. *Bulletin of The Johns Hopkins Hospital, Vol. XXIII, No. 261, November, 1912.*

The rarity of subluxation of the major cornu of the hyoid bone, or the infrequent diagnosis of this condition, explains why so few cases have been reported. The writer's attention was attracted to this fact when he was trying to discover cases with similar symptoms to those which a patient had who presented himself for diagnosis in the Laryngological Dispensary of The Johns Hopkins Hospital.

The patient, Dr. McC—, of Texas, stated that in 1887, when a child of seven years, he suddenly became unable to swallow. He was taken by his father to a physician who tried in vain to get something into place in his neck which had apparently become "twisted." The longer the condition persisted the more painful were his efforts to swallow. After two days, during which time the child remained with the physician, there was a sudden restoration of the normal condition. Repeatedly, after this, he had similar attacks in which swallowing became at first painful and then impossible. They would come on

when he yawned or turned his head suddenly. Sometimes the condition would be relieved of itself, as in the first attack, and sometimes he was able to obtain relief by pulling hard on the skin in front of the sterno-mastoid muscle. At the age of 23 he learned to "set it" as he expressed it. He inserts his index finger into his mouth at the side and base of the tongue at a point which corresponds, when one feels on the outside, to the attachment of the major cornu of the hyoid bone to the superior cornu of the thyroid cartilage, and presses outward and forward. Something goes back into position with a distinct click. These points were determined on examination during the time in which the abnormal condition was present. As far as could be determined by a laryngoscopical examination there was no change in the larynx.

A study of the anatomical relations of the hyoid bone and of the symptomatology of eleven cases of subluxation of the major cornu of the hyoid bone, including the author's case and ten cases collected from the literature, makes it seem probable that in this case there was a loose articulation of the major cornu with the body of the hyoid bone, or a loose attachment of the tip of the major cornu to the superior horn of the thyroid allowing greater freedom of movement of the major cornu than is normally present.

Aside from the author's case he gives histories in brief of eleven cases which have been reported and he observes that while the symptoms vary somewhat in severity the resemblance between the cases is so striking that the assumption seems warranted that the underlying cause is the same in each case. This is most probably a dislocation of varying grade of the major cornu of the hyoid bone in the direction outward, or inward and downward. Either type may occur as the result of trauma or of sudden movements of the head, neck, or jaws. In the latter case, it seems likely that there exists a loosened condition of the attachment of the tip of the greater cornu of the hyoid bone to the superior horn of the thyroid cartilage and perhaps, looseness of the articulation of the cornu with the body of the hyoid, allowing freer play of the tip.

Subjectively the patients experienced pain in swallowing (six cases) total inability to swallow (two cases), marked anxiety (four cases), a feeling as though a foreign body were blocking the oesophagus (three cases). In every case there was immediate and marked relief on reduction of the dislocation. Four cases came on during sudden movements of the neck and jaws (yawning, coughing, singing, etc.), four as the result of direct trauma from without by choking, or from within through the ingestion of a large solid particle.

*The Bence-Jones Proteinuria in Conditions Other Than Myelomatosis:
An Instance Associated with Metastatic Carcinoma.*

T. R. BIGGS and C. G. GUTHRIE. *Bulletin of The Johns Hopkins Hospital, Vol. XXIII, December, 1912.*

The authors make the observation that while Bence-Jones proteinuria is usually associated with multiple myeloma, the relation is not constant.

Also that the Bence-Jones protein has been found in conditions other than multiple myeloma. To support these contentions they have collected a number of cases from the literature and also record a case of their own of metastatic carcinoma in which the presence of the Bence-Jones body in the urine was demonstrated, this case making the second authenticated instance of the sort on record.

In collecting their material they were struck by the fact that all the cases of Bence-Jones proteinuria have one point in common, namely, more or less extensive involvement of the bone marrow. They observe that the relation of multiple myeloma to Bence-Jones proteinuria cannot be specific for other disease processes involving the marrow may lead to the excretion of this unusual body.

The authors believe that there is much to commend the suggestion of Hopkins and Savoy that Bence-Jones proteinuria be viewed as an intermediary metabolic anomaly analogous to cystinuria and alkapturia, but occurring at a higher level.

They believe that it is possible that the bone marrow has some function in connection with the endogenous metabolism of proteins, which may be disturbed by any one of a variety of disease processes, and produce this unusual body in the urine.

Further Observations on the Carcinoma Skin Reaction.

HANS LISSEK and ARTHUR BLOOMFIELD. *Bulletin of The Johns Hopkins Hospital, Vol. XXIII, December, 1912.*

In the hope of simplifying this test and shedding further light on its value in the diagnosis of malignant disease, the authors carried out a series of experiments upon 62 verified cases of malignant disease (carcinoma and sarcoma), and in 94 cases of healthy individuals, the patients suffering from various non-malignant ailments. Throughout the experiments the corpuscles of Group IV alone were used (the corpuscles of which are neither agglutinated nor hemolysed by any sera *in vitro*).

A summary of their 156 cases in which the corpuscles of Group IV alone were used shows that:

1. In 62 cases of verified malignant disease, two-thirds gave a positive reaction, and one-third were negative.
2. In 94 control cases, 91.6 per cent were negative and 8.4 per cent positive.
3. As a practical diagnostic adjunct, a negative skin test adds little or no weight to the evidence against cancer, being comparable to many other clinical tests of empirical nature.
4. A positive reaction is strong presumptive evidence of cancer.
5. To obtain reliable results, corpuscles of Group IV must be used.

ALBANY MEDICAL ANNALS

Original Communications

HEALTH DIRECTION IN THE PUBLIC SCHOOLS.

Read before the Fourth International Congress on School Hygiene at Buffalo, N. Y.

By CLINTON P. McCORD, M. D.,

Medical Inspector of Schools, Albany, N. Y.

We are living in the renaissance of science as applied to society. The last five years have given us as great advance along lines of public health as the last twenty-five years have brought us progress along clinical channels. We are in the midst of a great movement toward the improvement of physical conditions, which movement has as its real purpose the prolongation of human life. At work, in some measure, are forces that will make for better living and improved social conditions. Welfare work embraces lines of investigation and activities that have come to have their expression in organized departments in many of our large industrial concerns, in probation officers in connection with our juvenile courts, in our various co-operated charities and in our institutions for the segregation and proper care of a certain number of our criminals and mental defectives. Lines of research have revealed the dangers that threaten our social body through disregard of laws of heredity of almost mathematical precision.

The day has passed when we can truthfully say that the child owes a debt of gratitude to parents for the privilege of having been born, unless he reach maturity, sound in body and with a fair degree of training. The day is here when no board of education can shut its eyes to the great need of proper physical care of the community's future men and women during the years when these little ones are so largely within the keeping of the schools. It is no longer enough to supply buildings and books

and teachers; there must also be the certainty that attendance upon this training, which law has in so many states made compulsory, shall not mean "compulsory disease," to use another's apt phrase.

The explanation of the whole movement for better health conditions may rest on the possible psychology of altruistic moral emotion, namely, on the selfishness of self-preservation, but no matter, the fact remains that we are looking after our less well-informed neighbor and are trying to give him a better chance for freedom from suffering and a wider share in real happiness.

Emerson said: "The greatest wealth is health," and yet few believed this to the extent of seriously governing their actions and life along health lines, until the past few years. To-day the wisest of our people, no matter how important is their work or how wide the range of their responsibilities, are finding time to think of their physical well-being, realizing that without the physical basis real mental efficiency is never attained. And so the financier is seen on the golf links, the organizer or business man is out in his automobile and the tense surgeon relaxed during a horseback ride.

Along with all this has come the interest in the growing child. This has developed the laws concerning child labor, the infant welfare work, the various lines of social research and medical inspection and the school nurse. Compulsory education in this country placed approximately 20,000,000 children under a daily routine which often was far from being conducive to good health and normal development. Modern medical inspection arose in this country some nineteen years ago to combat some of these physical evils and to point the way to better health as the first essential to school progress. It in turn has grown to assume a scope which makes it more properly health direction, and I wish to propose a more general adoption of the term, Health Director, as more accurately designating the functions of the officer who is to play a part constantly increasing in importance in our educational systems.

I hope to convey in this paper what I believe should be the scope that health direction may properly assume in the public schools of cities of 100,000 or less (the cities which in greatest numbers will introduce the work within the next few years)

with reference to some of the details of initiation of such system so far as we have realized our ideals in the capital of this State. Since in most of the smaller cities persist remains of the "village spirit" which must be combated in the introduction of a new institution, I have felt that a brief description of conservative methods of establishing the work might be welcomed by executives who are contemplating such innovation in their cities. In a paper, limited as is this one, it will be impossible to amplify any statements. I hope therefore, simply to present a bare outline and trust that this will invite inquiry which it is our hope to satisfy in subsequent publications or in exhibits of the actual workings of our system at Albany, N. Y., as the months bring a realization of ideals and an enlargement of the scope of the work. I direct your attention to our small chart exhibit as a unit of the New York State Education Exhibit at this Congress, not as presenting a startling array of figures, equipment or paraphernalia of medical inspection, but as setting forth what we believe to be the best plan of organization in cities of 100,000 or less, with the chief features of our system together with the lines along which we hope to develop.

One of the proofs of a great thinker is his readiness to change his opinion at any time in the face of more convincing evidence, even though that change involve a direct contradiction of his original opinion. This strictly scientific quality of thought has been characteristic of Dr. Leonard P. Ayres, who at present favors the "full-time physician and nurse assistants" plan of medical inspection wherever the scope of the work permits. It is this plan which we have in operation at Albany, and it is this plan which I am convinced is practicable in cities of 100,000.

Allow me to deal briefly with the initiation of such a system, touching on the things of special interest to executives contemplating medical inspection, and then pass on to a consideration of such a system when extended to embrace the wider idea of health direction.

Medical inspection constitutes a specialty as much as laryngology or otology are specialties. The work has not found a place in the curricula of many of our best medical colleges, and I know of but two American medical colleges which offer courses on the diseases of children of school age and on social pediatrics.

In view of the fact that within the next few years several hundred cities will institute medical inspection, there would seem to be a need for well-trained young men along the line of this special work.

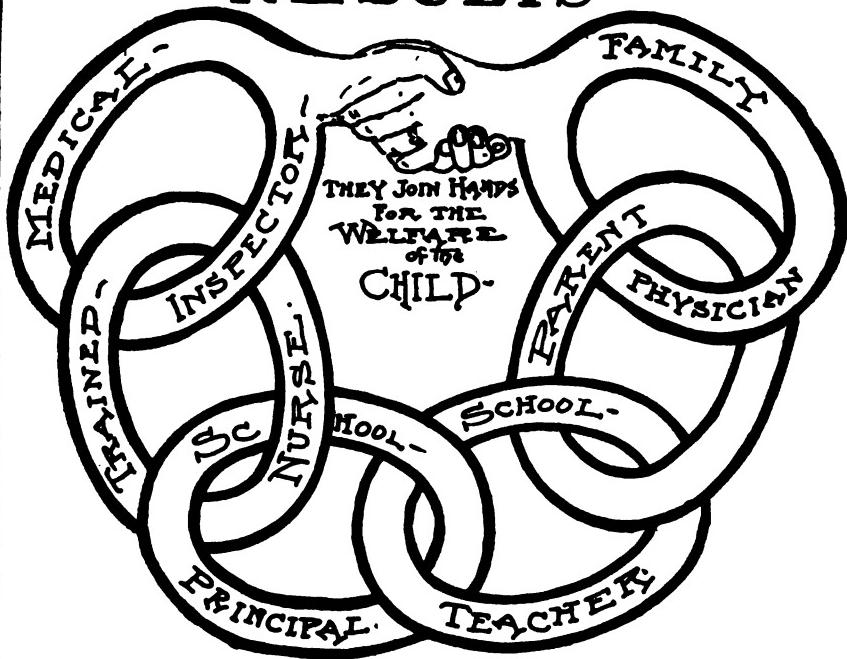
The "full-time" man selected preferably should have had some experience as an executive in school work. This, with a first-class medical training, including a knowledge of the elements of the specialties, makes a happy combination. He should have a fair outlook upon pedagogical and sociological problems. He should know the "special case" child. The salary should be somewhere between \$2,000 and \$3,000 a year. There should be a sufficient number of nurses to assure a daily visit to every school (approximately one nurse to every 1,500 children). The inspector should have an office adjoining that of the superintendent of schools. Provision should be made for a system of adequate records if the work is to be placed from the start upon a scientific basis. A good working and reference library along medical, psychological and sociological lines must be gathered, and a few of the best magazines bearing upon these lines of science must come regularly to the office. These items must be considered when the question of appropriation for the work is up for discussion.

The appropriation for the first year of such a system in a city of 100,000 should be at least \$5,000, and this amount will furnish only the minimum number of nurses. It will be necessary to increase this sum from year to year as the number of nurses for the most efficient conduct of the work is approximated, and also to provide for any additional salaries, equipment, attendance upon conventions, etc., such as may be indicated under a system of health direction as outlined farther on in this paper. The board of education should secure the co-operation of the medical profession in any city in question. It is not possible as a rule to please every physician in the matter of the selection of an inspector, and because of the local jealousies, or often because of the lack of a specially trained man or a high-grade man who is willing to give up his practice for the new work, it is often wiser to import a man who will be free from the local prejudices and will be ready to deal fairly with everyone. The principal thing to be combated at

the start in smaller cities strange to say, is the antagonism of the profession. This a greater drawback to effective work than is the opposition of parents to what they often believe to be an infringement upon their rights as fathers and mothers. The antagonism upon the part of the physicians at the start of the work arises, in rare instances, from personal jealousy or an unholy eagerness to "work" any "unprotected" "good thing," but in most instances from a misunderstanding as to the purposes of medical inspection and the methods of the inspector. The fear arises that he will favor particular doctors or that he will treat or suggest treatment. Interviews by newspaper men and talks to parents' clubs and to the local medical society must be appreciated as means of abolishing these wrong ideas. The "full-time" man removes the danger that the inspector may "work" his position to increase his private practice. It is true that the nature of the defects discovered by medical inspection will mean more work for men who are in the specialties, but well-trained family physicians see this and will do only what they would have done had the cases come to them direct from the parent—namely, send the patient to a reputable oculist, rhinologist, etc., if the condition be not within the scope of general practice. There is of course always someone who fails to distinguish a "refracting optician" from an oculist, or, a little patient will be dismissed with the assurance that he can't see well because he has styes, when even a "refracting optician" has about come to recognize styes as among the concomitant symptoms of an error of refraction. But these cases are few indeed, and the great mass of general practitioners refer their cases to the proper specialists; at least this has been so in a number of representative instances where I have followed the cases. This makes it possible for the inspector conscientiously to say, when questioned as he frequently is by the parent, "Your family physician will handle the case for you, and you can always depend upon his advice."

I cannot bring myself to believe that the educational system, through its medical officer, should in any way usurp the privileges of the family physician, or take the position of recommending the type of specialist to be consulted. Because a certain number of general practitioners of medicine, as of every

COOPERATION BRINGS RESULTS



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other profession, are poorly trained, incompetent and unethical, does not modify the matter in our direction. These questions are serious and might well be made the basis for radical action on the part of the well-trained, cultured men as typified in the higher ranks of the profession, but the absolute unfitness of any two or three men in any community to deal properly with cases seen by the medical inspector, does not affect the proposition that the family physician is the logical man to advise the parent concerning the child who has been reported. He presumably knows the family history and the home life of the child better than anyone else and should be looked to for active co-operation.

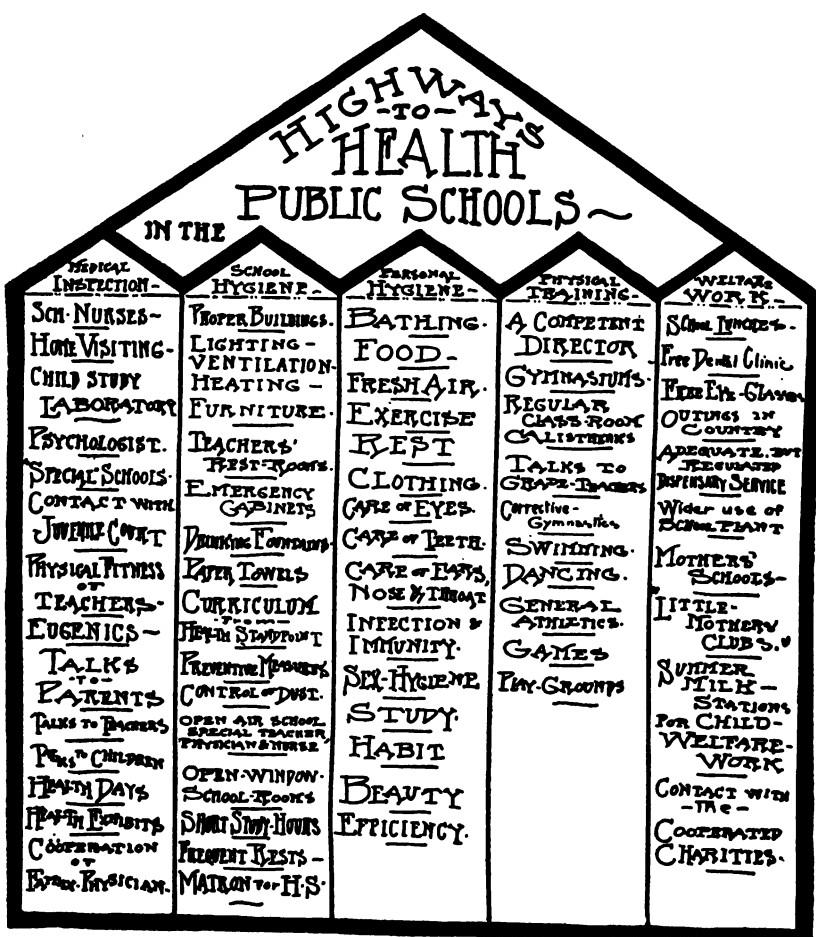
Fortunately there are in every community cultured, well-trained, ethical physicians, who, as soon as they see that the inspector in no way trespasses upon their rights as family physicians, are ready to examine the workings of the system, and in many cases come to be the inspector's most helpful counselors. These are the real "pillars" of the profession, and if the inspector and the educational authorities under whom he works are sincere, and show this sincerity by a strict adherence to the highest type of professional ethics, the co-operation of these men is assured, as is their approval of *any* public work which has for its object the betterment of health conditions and the advancement of health standards.

The policies involved in the initial plan, the analysis of a local situation, the avenues of appeal to the parents, principals, teachers, etc., are matters of detail, depending upon the city, the type of people, the personality of the inspector and those with whom he is most closely associated. When medical inspection is a part of the educational system as in the plan here discussed, the question of its relation to the local board of health arises. The most courteous relations should of course exist although they "touch hands" in comparatively few cases. The acute contagious diseases are the only cases occurring among school children which fall under the authority of the board of health. By a most satisfactory arrangement effected with the board of health in our particular field, all cases of the "so-called" reportable diseases discovered by the inspector are reported by telephone to the board of health, and in turn, each

morning, the office of the medical inspector receives a report of all such cases known to the board of health. Here these cases are tabulated in relation to the different schools, and where any school is affected the inspector and the principal concerned have prompt knowledge of the fact. When speaking of contagious diseases I feel that one is always moved to criticism of the existing inefficient methods of quarantine observed in many of our second class cities. In view of recent researches on measles and scarlet fever the question naturally arises as to whether or not the period of exclusion for these diseases, or at least for measles, might not be materially shortened in some cases with a great saving in school time to the child. In the matter of diphtheria, the question forces itself as to whether or not a more careful quarantine, the proper enforcement of the rule requiring two negative "cultures" on two successive days for release (which is seldom enforced in smaller cities) might not greatly decrease the number of cases of this disease which every winter takes its "toll" from the ranks of the school children.

From the point of view of the medical inspector there is one avenue open, which involves considerable work but which offers greatly to lessen the spread of this disease in the schools, namely—to make "cultures" of every sore throat, and where a case of diphtheria develops to culture at once the throat of every child in the class and exclude the "carriers." In a class of forty-eight this spring in which one case of the disease had developed, two "carriers" were discovered and an epidemic probably averted.

Let us proceed to a more definite consideration of health direction. You will notice that I seek to suggest a wider range of activity for the health director than the field commonly assigned to a medical inspector. As before stated, nearly 20,000,000 children crowd the public schools of the United States. Compulsory education has placed many of these children under a daily routine not always the best from a health standpoint. Out of this need arose modern medical inspection, and it in turn has been the opening wedge for work of such scope that the term health director seems to fit better the officer who is to execute these important duties.



"That the IDEAL shall be REAL to thee~

Albany-N.Y.

HIGHWAYS TO HEALTH IN THE PUBLIC SCHOOLS

What is the scope that this direction, as part of the educational system, should assume?

There are five chief highways to health in the public schools. Health direction should in a large measure take cognizance of them all. The accompanying chart perhaps best presents the details.

It is very plain that such a system cannot be adopted outright at the start of the work in any given city. Perhaps the first step usually will be the initiation of a system of medical inspection with one "full-time" physician and four or five nurse assistants, and only those record cards, equipment, etc., absolutely essential for careful and scientific work. As the need for additions to such a system becomes evident (which is usually when a year of good work has demonstrated the great value of the venture to the city) it may well be expanded along the lines indicated. Eventually such a system would include, beside the health director, a "full-time" physician, devoting his energy to the medical inspection phase of the system, a psychologist or at least a person skilled in the use of the Binet tests, with a child study laboratory, and a sufficient number of nurses to assure a visit to each school every day (approximately one nurse to every 1,500 children).

With such a working force the health director would be in a position to make exhaustive studies of the various health problems, to keep the needs of the child before the public and the educational authorities, to confer to some purpose with the superintendent of schools upon medico-pedagogical questions, to supervise the conduct of the various school plants from a health standpoint, to give expert advice to the board of education upon matters of school hygiene, furniture, physical fitness of candidates for the teaching force, etc., to act as consultant to the director of physical training, to act as adviser to the director of school lunches, to supervise the work of the child study laboratory and consult with the superintendent of schools in regard to the training of the "special" child,—all these things in addition to the supervision of the actual work of medical examination of children by the "full-time" examiner and nurse assistants. The open-air school may well be visited by a special physician and nurse whose reports should be filed with the health

director. The question of the work in the child study laboratory perhaps requires more careful amplification. We have in our schools some 10% of children suffering from poor nutrition, some 20% of nervous cases, some 20% with speech defects, some 2% of those mentally deficient. All the above are "special case" children. The director's office might well be made a "clearing house" for the worst of these cases. Here, with proper equipment, a more careful study could be conducted than is possible at the schools, and proper disposition of the cases could then be made. The cases of speech defect would be assigned to special teachers for varying periods of training, the poor nutrition cases to the open-air schools or the open-window class-rooms and the care of the director of school lunches, the nervous and "backward" cases to the child study laboratory, where special apparatus is available and where the Binet tests could be applied by a person skilled in the use of these valuable diagnostic aids. The children found mentally deficient could then be assigned to the "special schools." Let me emphasize the fact that there are certain mentally deficient children in the public schools that are detectable only by the specially trained examiner, and upon whom positive diagnosis should be made only after a careful psychological examination. Is the system I have pictured possible?

I do not say that in Albany to-day we have even the beginnings of some of these lines of good, but I am confident that we have the right start. For the benefit of cities contemplating a system, formulated along scientific lines, I would say, that the first requisites for the realization of such a system are: (1) men on the board of education who are broadminded and far-seeing, fearless in their manhood and dignified in their citizenship, and with hearts warm for human suffering, and (2) a superintendent of schools who is an educator and scholar in the true sense of those words—a man who can see beyond the present system of desk and book and blackboard, and can appreciate the real end of education—human happiness. These chief requisites our city possesses, and I can predict, that, with commissioners of education and a superintendent who are alive to the wisdom of prevention as well as the good of cure, and with letters from the leading physicians of the city approving of any plan which

means more careful supervision of children of school age from the standpoint of health, in a couple of years you can visit Albany and see such a system in practice, working untold good to 12,000 future men and women. The health supervision of children from infancy to school age is a topic which opens a new sphere for professional activity. From the active co-operation which I have enjoyed, of representative physicians, I would conclude that the "leaders" at least in the profession, as practical physicians, are more alive to the philosophy of the "health movement" as it affects school children than school hygienists credit them with being. If the profession as a whole awoke to the wisdom of such supervision prior to school age, the co-operation which they would then measure to the school and child hygienist would more than double the results of present methods, raising the health standard among school children and fulfilling one of the vital objects of school training—to bring the child to maturity with his powers so developed and his energies so conserved that the richest return may accrue to the State in its vigorous, aggressive, progressive men and women.

DISCUSSION

The foregoing paper was discussed at some length by the following persons, the first two of whom did not reduce their discussions to writing, and these are therefore not available for publication. Superintendent C. Edward Jones filed his discussion with the Secretary of the Congress and it will appear in the proceedings. A copy is not now available:

Dr. Thomas Ennett, Chief Medical Inspector of Schools, Richmond, Virginia.

Dr. Struthers, Chief Medical Inspector of Schools, Toronto, Canada.

Dr. C. Edward Jones, Superintendent of Schools, Albany, N. Y.

Dr. ALBERT VANDER VEER, Albany, N. Y.:

From the standpoint of history and experience, Dr. McCord has given us a very wholesome paper. He presents a firm foundation upon which to build, and a lot of material from which to select. In his valuable paper he has combined a statement of facts commanding our entire confidence, correlating these facts in such a way as to impress one with the necessity of making an analysis of conditions presenting in connection with school hygiene, as well as methods of organization. In clear, concise language he has given us the clinical conditions he has observed from time to time, has shown how this information can be applied, and has held up, in a very interesting manner, the subjects that call

for action along his line in school inspection. There can be no doubt that he has the medical side of the work well in hand, as well as how to approach it. His careful study of conditions in the public schools of Albany, and of which I am personally cognizant, leaves little opportunity for argument against the introduction of the methods he advocates. His whole paper is full of the germ of active, earnest work. There is no hesitancy on his part in presenting the practical points of which we are so much in need at the present time. He has clearly shown how that action may be taken, after his careful discussion of the important work he has been doing for the past year. He has not left us ignorant of what to do but proceeds in a distinct, judicial manner to tell us how to accomplish these results. He has given us a complete résumé of the situation, in cities of one hundred thousand inhabitants.

The conditions, and the methods of organization, lead to simplification of the whole work; in fact, his paper manifests great generalship, and must result in much good regarding the better understanding of this branch of eugenic study.

THE SCHOOL CHILD AS A CARRIER OF WHOOPING COUGH.

*Read at Fourth International Congress on School Hygiene, Buffalo, N. Y.,
August 26, 1913.*

By L. WHITTINGTON GORHAM, M.D.

Whooping cough is a peculiar disease of the breathing area characterized by severe paroxysms of coughing. Young children are especially susceptible to it. The paroxysms coming at two or three hour intervals in the early part of the infection, often appear at half hour intervals, of both day and night, when the height of the disease is reached. At such times, the child presents a distressing picture. The attack starts with a series of short coughs which diminish in their intensity, until the child has expelled all the air it can from its lungs. Then follows the long-crowing gasp for air, which produces the familiar whoop. During the paroxysms the face becomes swollen and red, the eyes are suffused; the tongue protrudes, and there is a general outpouring of tears, nasal discharge, saliva, and bronchial secretion. The stomach usually loses its balance amid this tumult and vomiting ends the paroxysm. This may be all for at least an

hour or more, but in severe cases, one paroxysm is succeeded by another.

It is not so much to the suffering resulting directly from these attacks that I wish to call your attention, but rather to their serious and all too frequent complication of bronchopneumonia, which spells death in so many cases. There is also a complication of whooping cough which, though not fatal, succeeds in incapacitating its victims for life. I refer to the insidious dilatations of the bronchi, known as bronchiectasis.

The cause of pertussis, which is another name for whooping cough, is now known. The lesion which this known agent produces has also been discovered, but of these points, I shall speak later on in detail.

We are beginning to see the dawning of a new era in medicine. The discoveries of Pasteur, Virchow, and Lister laid bare a new world in research, and, digging in the trails, which these masters blazed, workers have been patiently and diligently collecting facts. One disease after another has yielded its secret of cause and mode of transmission, until the present finds us qualified to successfully limit the spread and to combat the progress of many a serious infection. For empiricism we may now substitute a treatment founded on fact. Our efforts may be directed against the cause, rather than against its result. Praiseworthy as ministering unto the ills of the individual may be, our more comprehensive and exact knowledge calls for a higher ideal than this. An ideal which aims at the prevention of disease, and the saving of life, not for the individual, but for the community. This is the hope of Preventive Medicine, and this, the new light which we are beginning to see.

So rapid has been the acquisition of information regarding different infections, and so great is the variety of these contributions, that the application of our new found knowledge has not always been as immediate as one might wish. It requires a certain period of time for advance in science to filter out from the laboratory to the physician and to the general public. The mere report of an important discovery does not bring knowledge regarding it into practical daily use. For example, the announcement that typhoid fever is caused by a definite micro-organism, and not by a divine visitation, and that typhoid bacilli often live

in contaminated water and milk, did not lead at once to a clean water and milk supply; and has not yet in some communities—thirty years afterward.

When there have been so many pressing problems in Preventive Medicine, connected with typhoid fever, tuberculosis, and diphtheria, it is not to be wondered at that little attention has been directed to whooping cough. A considerable amount of laboratory investigation, however, has centered in it during the past few years, with the result that new light has been shed on this infection. I shall endeavor to prove to you that whooping cough is a disease, serious enough to warrant attention as an important problem in school hygiene, and I shall further point out to you its principal features as revealed by a study of statistics and by laboratory work.

Physicians as well as laymen generally regard whooping cough as a more or less harmless infection. The justification for this view seems to be the argument that almost every child has whooping cough at some time in its life, and that recovery is the usual outcome. Yet any disease which kills 10,000 children yearly in the United States is a serious one. Rucker says, sensationaly, but truly: "If bubonic plague were to kill that many children in the United States in one year, the whole world would quarantine against our country. A child dead of whooping cough is just as dead as a child dead of plague."

An appeal to physicians urging them to a sense of the gravity of whooping cough was made by Dr. John Lovett Morse of Boston, in a paper read at the Annual Meeting of the Society for the Study of the Diseases of Children. (Amer. Pediatrics Soc., Washington, May, 1913.) With considerable effort, Dr. Morse has collected recent statistics, by writing to the Boards of Health of nearly every State in this country. I have drawn largely upon his paper for the figures which I shall present to you.

The United States Census Bureau gives a report for 1906 of the mortality from whooping cough. The figures were collected from a registration area comprising somewhat less than one-half of the country. In this area there were 6,324 deaths in children under five years of age. This would make an estimated total of at least 10,000 deaths annually in the United States. But significant as these figures are, a clearer conception of the serious

nature of whooping cough is to be gained by comparing its death rate with some of the generally feared infections of childhood. For example, how does whooping cough compare with scarlet fever and diphtheria. The United States Public Health Reports for 1910 will inform us on this point. The death rate per 100,000 for whooping cough, scarlet fever, measles, and diphtheria in this year were as follows :

Whooping cough	11.4%
Scarlet fever	11.6
Measles	12.3
Diphtheria	21.4

Morse's figures, obtained from thirty different States in 1911, are in perfect accord with the above. He found in this area :

Whooping cough responsible for 6,251 deaths	
Scarlet fever " "	4,232 deaths
Diphtheria " "	9,579 deaths

Undoubtedly there are a large number of deaths in children due to bronchopneumonia, following whooping cough. These fatalities, if added to the whooping cough score, would still further increase the mortality figures of this disease. But we have enough to convince even the most sceptical that whooping cough is just as serious an infection as scarlet fever, and fully half as serious as diphtheria. To be sure 96% of the 6,324 deaths from whooping cough in the United States in 1906 were in children under five years of age. The distribution is shown in detail as follows :

In the 1st year the mortality was 57 %	
" " 2nd year " " " 23 %	
" " 3rd year " " " 8 %	
" " 4th year " " " 4 %	
" " 5th year " " " 2.5%	

The disease is therefore most fatal in the very young.

What is being done in this country to reduce the whooping cough death rate? What are the rules (1) regarding notification, by this I mean the report of all cases to the Board of Health; (2) regarding quarantine, by this I mean the keeping of the patient by himself within his own infection area, where he will not be a menace to others; (3) regarding disinfection, by disinfection I mean the destruction of all infectious material

coming from the patient; and (4) regarding school attendance; i. e., how long shall the child be kept out of school, and shall the other children in the same house be allowed to go to school, whether they have had the disease or not?

Whooping cough is a notifiable disease in 29 out of 43 States. In many of these there is doubtless difficulty found in the making of accurate reports. Isolation is required by law in seven States, modified isolation is prescribed in two others, and isolation is recommended in a third. Thirty-one States have made no provision in this regard.

Disinfection is part of the law requirement in four States. It is recommended in one. Thirty-four States are without statute on this point.

Two States at least have no law forbidding children who have whooping cough to attend school. Only three States specify how long they are to be kept at home before returning to their studies. In seven States the other children in the family are not permitted to attend school, when there is a case of whooping cough in their home. In eleven States the other children may continue going to school, no matter whether they have previously had the disease or not. In six States they are allowed to continue if they have had whooping cough, and in two States if the patient is isolated. Nine States fail to make any provision whatever in this regard.

The arrangements for the hospital treatment of whooping cough are most inadequate. The majority of the general hospitals throughout the country refuse to take whooping cough cases, or admit only a few with severe complications and then treat them in separate rooms of an isolation ward.

The management of whooping cough cases in our dispensaries follows no general rule. In most instances the children at their first visit mingle freely with the other children, while waiting their turn to be examined. In a few out-patient clinics these cases are picked out by a physician before the children go to the waiting room. In the majority of clinics these whooping cough children are not allowed to return for treatment, but are referred to district or dispensary physicians. In some hospitals they are seen before or after dispensary hours, or at a special time of day.

The United States does not stand alone in the inadequacy of its care for whooping cough. Conditions are about the same in most European countries.

Need I go further to convince you that whooping cough is not a trivial infection, and that there is a woeful lack of effort to control the disease?

I should like to tell you now some of the facts about the cause of whooping cough.

Whooping cough is caused by a minute ovoid bacillus which is found constantly in the sputum of children in the early stage of disease. It is about the size of the influenza bacillus and when magnified 1,000 times you could lay two of them on the head of an ordinary pin. Bordet and Gengou, two illustrious scientists, working in Belgium, first observed the bacillus in the sputum of a child in 1900. Later, in 1906, after repeated failures, they were able to make the organism grow in pure culture in a glass test tube—a great accomplishment, as the bacillus dies quickly on removal from the human body, and is loth to grow on artificial media. This fact leads us to an important conclusion. The disease must be spread by direct contagion; i. e., by the transfer of the bacilli from one child to another. The bacilli are undoubtedly present in the fine droplet spray which issues from the mouth and nose during cough. But the fact that the organism dies readily emphasizes that further dissemination of the disease can be prevented if the child is kept in strict quarantine. Bacteriologists had generally accepted this bacillus, called Bordet-Gengou, after its discoverers, as the cause of whooping cough, because of its constant presence in the early stage of the disease and because of a specific serum reaction which has been obtained. The final and convincing proof, however, that this minute rod is the cause of every case of whooping cough, was demonstrated recently by Dr. Mallory of Harvard. By exceptionally keen observation accompanied by special care in the technique of cutting and staining tissue, he found a tiny bacillus in the trachea of a child dead of whooping cough, identical in appearance to that described by Bordet and Gengou. A discovery very simple in itself, it is true, but a fact that has been overlooked nevertheless for many years.

It has been my privilege to work in Dr. Mallory's laboratory

during the past year. I should now like to show you, with the lantern, some of the preparations made there.

Slide 1 shows a pure culture of the Bordet-Gengou bacillus which was isolated from the sputum of a child, who had been ill for one week with whooping cough.

Slide 2—See text.

Slide 3 represents a higher magnification of the preceding.

Slide 4 shows the lesion after the disease has progressed for six weeks. It is noted that the organisms are greatly decreased in number.

Slide 2 shows the cells lining the trachea (windpipe) of a child who died after two weeks of whooping cough. The hair-like processes on these cells (cilia) normally assist in the removal of mucus secretion by gently waving in an upward direction. Here they are seen to be matted together with clusters of small bacilli. Their normal action is impeded. What is the result? Two hundred square feet of mucous area continues to pour out its secretion. Instead of being carried up to the mouth and unconsciously swallowed, as occurs in the normal individual, all this material stagnates. Nature's effort to rid herself of this collection results in a severe paroxysmal cough. The persistence and severity of the cough is now clear to you. It depends on the presence and growth of these minute bacilli in the depths of the cilia.

Such is briefly our knowledge of whooping cough. We then ask how close is the relation of this disease to the school child. The fact that 95% of the deaths occur in children who are not old enough to attend school, should not mislead us. Mortality figures give us no idea of the real incidence. Each case must be regarded as a source of danger and possible infection. Older children may themselves suffer very little from this disease, but yet serve to communicate it to younger members of the same household. It is not beyond the limit of imagination to conceive of some individuals harboring the germ without showing symptoms themselves. In other words, there may be whooping cough carriers.

Certainly the time is now ripe for a campaign of education regarding whooping cough.

An interesting example of the practical application of scientific knowledge of disease is shown in the animal kingdom. There

is a disease which occurs in puppies known as distemper which resembles whooping cough. It is caused by a bacterium which looks much like the Bordet-Gengou bacillus, and the lesion produced is identical with that of whooping cough. Distemper was proving such a handicap to the raising of thoroughbred dogs that men interested in this business were found ready a few years ago to financially assist a bacteriological study of the disease. This work has been reported. We have learned the cause, the lesion produced, and have proof that the disease can be controlled by a distemper vaccine. The laboratory study of whooping cough has progressed as far as that of distemper. The argument by analogy is strong. The attempt to cut down the death rate from whooping cough ought to interest us as much as the rearing of a greater number of healthy puppies.

Very little can be accomplished, however, until public health officer, physician, and layman realize that whooping cough is an infection of grave importance—an infection which plays a rôle equal to that of scarlet fever as a cause of death in children. With the realization of this fact we shall have a careful report of all cases to the Board of Health, stricter rules as to quarantine and school attendance. Hospital care will then be made available for those who cannot be properly cared for at home.

As educators and hygienists you are peculiarly placed to spread the knowledge of the facts which I have summarized, and to aid in their practical application. You have a rare opportunity to join hands with health authorities and physicians in the moulding of public opinion regarding this underestimated but serious disease, whooping cough.

ALBANY HOSPITAL.

ELEVENTH REPORT OF PAVILION F, DEPARTMENT FOR MENTAL DISEASES, FOR THE YEAR ENDING SEPTEMBER 30, 1913.

By J. MONTGOMERY MOSHER, M. D.,
Attending Specialist in Mental Diseases

To the Board of Governors:

I have the honor to present the eleventh report of Pavilion F, for the year ending September 30, 1913.

There remained in the Pavilion on October 1, 1912, twenty-two patients—seven men and fifteen women. There have been

admitted one hundred and ninety-eight men and one hundred and twenty-one women. The whole number of patients under treatment was, therefore, three hundred and forty-one.

There have been discharged three hundred and ten patients—one hundred and eighty-seven men and one hundred and twenty-three women, and there remained in the Pavilion at the end of the year, eighteen men and thirteen women.

The following tables show the forms of disease and the results of treatment for the year, and since the opening of the Pavilion:

TABLE I.—SHOWING THE FORMS OF DISEASE AND THE RESULTS OF TREATMENT FOR THE YEAR ENDING SEPTEMBER 30, 1913.

FORM OF DISEASE.	Recov- ered		Im- proved		Unim- proved		Died		Remain- ing		Total		In Admission
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium.....	1	1	1	3	...	1	...	1	2	1	4	7	11
Confusional insanity.....	1	5	3	6	6	11	...	1	...	2	10	25	35
Melancholia.....	2	9	2	8	7	7	...	2	2	5	13	31	44
Mania.....	...	1	...	1	3	3	...	...	1	...	4	5	9
Primary dementia.....	1	...	4	4	7	2	...	...	1	...	13	6	19
Recurrent insanity.....	...	...	2	2	1	4	...	...	1	3	7	10	
Chr. delus. insanity.....	...	1	1	5	2	...	...	...	...	...	6	3	9
General paralysis.....	...	1	...	9	1	...	...	1	...	...	11	1	12
Terminal dementia.....	...	4	1	11	7	4	2	6	2	25	12	37	
Idiocy and Imbecility.....	...	3	1	3	7	...	...	...	...	6	8	14	
Alcoholic delirium.....	28	4	1	...	...	...	5	...	...	34	4	38	
Alcoholism.....	...	25	3	6	...	...	1	...	2	34	3	37	
Drug addiction.....	2	1	1	1	...	...	...	...	1	3	3	6	
Hypochondriasis.....	...	...	4	...	1	...	...	...	...	5	...	5	
Epilepsy.....	...	...	3	...	1	...	...	...	...	4	...	4	
Neurasthenia.....	1	...	2	2	1	2	...	...	...	4	4	8	
Hysteria.....	...	2	1	4	...	1	...	...	1	1	8	9	
Organic brain disease.....	...	2	...	2	1	...	...	...	...	4	1	5	
Cerebral concussion.....	1	...	...	...	...	...	...	1	...	2	...	2	
Meningitis.....	...	...	1	...	...	...	2	...	...	3	...	3	
Typhoid fever.....	2	...	...	...	...	...	...	...	...	2	...	2	
Jaundice.....	...	1	...	...	...	...	1	...	...	1	1	2	
Tuberculosis.....	...	...	1	...	...	...	5	1	1	...	7	1	8
Pneumonia.....	...	...	1	...	...	...	...	1	...	...	1	1	1
Organic heart disease.....	...	1	...	1	...	...	1	...	...	2	...	2	
Fracture of skull.....	...	...	1	1	...	...	1	...	...	1	1	2	
Carcinoma.....	...	...	1	1	...	...	...	1	...	1	1	1	
Nephritis.....	...	...	1	...	...	...	1	...	...	1	1	1	
Pleurisy.....	...	...	1	...	...	...	1	...	...	1	1	1	
Arthritis deformans.....	...	...	1	...	1	...	1	...	...	1	1	1	
Strangulated hernia.....	...	...	1	...	1	...	1	...	...	1	1	1	
No diagnosis.....	...	...	...	...	...	...	...	...	1	1	2	2	
Totals.....	39	24	63	38	64	50	20	10	18	131	205	136	341

TABLE II.—SHOWING THE FORMS OF DISEASE AND THE RESULTS OF TREATMENT SINCE THE OPENING OF THE PAVILION, FEBRUARY 18, 1902.

FORM OF DISEASE	Recovered		Improved		Unimproved		Died		Remaining		Total		Per cent
	M	W	M	W	M	W	M	W	M	W	M	W	
Acute delirium.....	35	49	19	22	7	16	13	12	2	1	76	100	176
Confusional insanity.....	12	10	30	36	28	43	5	5	2	2	75	96	171
Melancholia.....	25	41	43	103	52	98	1	9	2	5	123	256	379
Mania.....	7	10	15	20	29	42	1	—	1	—	53	84	137
Primary dementia.....	3	6	25	14	49	24	—	—	1	—	78	44	122
Recurrent insanity.....	1	—	13	22	14	19	—	—	1	—	28	42	70
Chr. delus. insanity.....	—	—	3	7	46	45	—	—	—	—	49	52	101
General paralysis.....	—	—	3	1	56	5	4	—	1	—	64	6	70
Terminal dementia.....	37	34	126	100	25	19	6	2	194	155	349	—	—
Idiocy and Imbecility.....	—	—	22	12	36	37	1	—	59	49	108	—	—
Alcoholic delirium.....	241	16	30	6	4	2	30	2	—	—	305	26	331
Alcoholism.....	19	5	235	22	25	5	2	—	2	—	283	32	315
Drug addiction.....	11	6	11	9	2	4	2	3	1	—	26	23	49
Ptomaine poisoning.....	1	2	—	—	—	—	—	—	—	—	1	2	3
Nephritis.....	—	—	—	—	1	—	8	2	—	—	10	2	12
Eclampsia.....	—	—	1	1	—	—	1	—	1	—	3	4	—
Epilepsy.....	—	—	20	4	21	7	1	—	—	—	42	11	53
Neurasthenia.....	4	1	24	17	6	13	—	—	—	—	34	31	65
Hysteria.....	2	11	2	23	1	5	—	—	1	—	5	40	45
Chorea minor.....	1	1	—	—	1	1	—	—	—	—	2	2	4
Exophthalmic goitre.....	—	—	—	1	—	—	—	—	—	—	1	1	1
Arterio-sclerosis.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Hypochondriasis.....	—	13	—	—	5	—	1	—	—	—	19	—	19
Organic brain disease.....	—	13	8	15	6	10	7	—	—	—	38	21	59
Cerebral concussion.....	4	1	3	—	—	—	—	—	—	—	8	1	9
Oedema of the brain.....	—	—	—	—	1	—	1	—	—	—	2	—	2
Locomotor ataxia.....	—	—	1	2	—	—	1	—	—	—	1	4	5
Myelitis.....	—	—	—	—	—	—	2	—	—	—	2	2	2
Arthritis deformans.....	—	—	—	—	—	—	—	—	—	—	1	1	1
Meningitis.....	—	1	—	1	—	—	7	1	—	—	9	1	10
Multiple neuritis.....	—	—	1	—	—	—	—	—	—	—	1	1	2
Paralysis agitans.....	—	—	—	2	—	—	1	—	—	—	3	—	3
Hydrophobia.....	—	—	—	—	—	1	—	—	—	—	1	—	1
Tetanus.....	—	—	—	—	—	1	—	—	—	—	1	—	1
Tuberculosis.....	—	—	2	2	1	11	3	1	—	—	16	4	20
Typhoid fever.....	3	1	—	—	—	—	—	—	—	—	3	1	4
Jaundice.....	—	2	—	—	—	—	1	1	—	—	1	3	4
Pneumonia.....	—	—	—	—	—	—	8	2	—	—	8	2	10
Heart disease.....	—	3	—	—	—	3	—	—	—	—	6	—	6
Pernicious anaemia.....	—	—	1	—	—	—	1	—	—	—	2	—	2
Chlorosis.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Septicaemia.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Gastro-enteritis.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Fracture of skull.....	—	—	—	1	2	—	4	1	—	—	6	2	8
Multiple fibromatosis.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Carcinoma.....	—	—	—	—	1	—	—	—	—	—	2	—	2
Strangulated hernia.....	—	—	—	—	—	—	1	—	—	—	1	—	1
Pleurisy.....	—	—	—	—	1	—	—	1	—	—	1	—	1
Malingering.....	—	—	—	—	—	—	—	—	—	—	1	—	1
No diagnosis.....	—	—	—	—	—	—	—	—	—	—	21	15	36
Totals.....	370	169	571	371	533	477	145	76	18	13	1658	1121	2779

The statistical tables reveal the usual activity of the service. With thirty-one beds, three hundred and forty-one patients have passed through the wards. The average daily number under treatment has been twenty-two, and at the close of the year there were four more patients on the wards for men than the number of beds, cots in the day-rooms being utilized. The average duration of treatment was twenty-three days.

When it is understood that practically all of these patients are in a threatening or even critical condition, and that many are emergency cases, in whom the issue of life or death is in doubt, the responsibility placed upon this department of the hospital may be conceived, and the freedom from accident gives assurance of the vigilance of administration. It is usually possible to predict and to anticipate the acts of patients of this class, after careful study of the individual manifestations. A few groups or types of mental processes are found, in which the probabilities are fairly definite. There are exceptions to the rule, however, and the unexpected may happen, for personal vagaries are not susceptible to any known methods of psychological analysis. The only safety lies in unremitting supervision, and day and night assignments of nurses have been arranged since the opening of the pavilion.

The experience of institutions generally shows that years are required for the adjustment of the various subdivisions, that their individual functions may be properly developed, and their relations established; that the officials and employees may become acquainted with their duties and with one another, that there may be no clashing of interests or of personality. Institutions are usually and most effectively placed under the direction of one executive head, whose authority over internal affairs is absolute, and this concentration of power has been found to assure the best results. The only important exception to this practically universal system is the general hospital, which is a federation of different departments, each supreme in its own work, and yet all having points of contact and of mutual dependence. The general hospital is really three institutions in one: the medical and surgical staff, the training school for nurses, and the administration. Unless these various members are maintained in orderly co-operation and friction avoided,

disaster results. To the Superintendent, in addition to his onerous duties of discipline, providing and maintenance of the property, falls this delicate task of co-ordination. To its acceptable accomplishment in our own hospital, the decreasing number of complaints and the increasing demands for its ministrations bear ample testimony. Indeed, the hospital is to be warmly congratulated that the change of executive, threatened a short time since, with the attendant train of disorganization and readjustment, was so happily avoided. That the unity of interests has been preserved has been especially fortunate for the efficiency of the department for mental diseases, particularly as the Albany Hospital, in common with many others of its class, found in its executive a physician whose training was had in an institution for the insane. As experience increases here a new field of medical endeavor is revealed, or, rather, opportunity is given for a more cautious and scientific examination of persons threatened with insanity or in the early stages of mental disorder, and hurried and immature decisions are avoided. It had formerly been the custom to attempt to care for the patient at home, under obvious disadvantages, and with limited knowledge and resources. The result was too often unfortunate and symptoms which might have been controlled and overcome under favorable conditions, grew more severe. As a last resort, and under necessity, an institution for the insane was sought, sometimes when the disease had so far progressed as to result in a prolonged and serious illness, and sometimes when chances of recovery had been lost. A most marked and widely appreciated result of the particular function of this department has been the restoration to health of a great number of patients in a relatively short time, who, without this assistance would have been pronounced insane and would actually have become insane.

It will be remembered, when attention is directed, that in the conception of this pavilion there was the thought of an addition to the hospital somewhat foreign to its real duty, and one which the Board of Governors of that time accepted with some misgiving, but with a high sense of charity and humanity. It was not quite clear that mental cases were medical cases, and the idea of temporary detention and seclusion was more prominent

than that of treatment. There was even some hostility among attaches coming from other hospitals, who looked upon this innovation with apprehension, asking that the police rather than nurses be called for duty. This brief retrospect of earlier conditions is interesting now, as it reveals the change which has taken place and the gradual evolution of an idea, one which was partly anticipated, perhaps, but has become more definite with experience. It is written in analysis of the work of the pavilion, and in answer to inquiries coming from time to time from many different places. An attempt has been made each year in the reports to explain and justify the work, but there appear some hesitation and doubt among those engaged or interested in hospital management as to the desirability of establishing a mental department on an even basis in hospitals for the sick and injured. But if it was thought at first that the community would be served in a beneficent way, at the expense of the hospital, it now appears that the hospital itself has been relieved and its efficiency much increased. In the matter of the care of the sick the interests of the community and the hospital are identical, and when the community looks to the hospital and finds inadequate provision or the hospital accepts the obligation of a patient and needs to ask his removal, it may be urged, not unjustly, that the institution is incomplete. A hospital may be constructed most liberally for the accommodation of different classes of patients: there may be complete surgical equipment, wards for contagious diseases, for children, for maternity cases, and for whatever else may come, and yet, in the absence of provision for the mental accidents of disease, each of these otherwise elaborately appointed departments may become ineffective and fail in its mission. During the year forty-five patients have been transferred from other wards, attempts at whose care on the development of mental symptoms had become futile or attended with risk. These transfers included cases of tuberculosis, typhoid fever, pneumonia, exophthalmic goitre, cancer, heart disease, nephritis, meningitis, jaundice, acute diseases or injuries accompanied by alcoholism, and a number of serious surgical conditions. The mental states which made these transfers desirable were those of delirium or stupor in varying degrees, one characterized by abnormal activity, the other by

helplessness, and each needing particular observation and care to be supplied only in a ward of adaptable construction, special facilities and skilled attendance. Observation of these patients further justifies our faith in the physical basis of mental disease, for patients admitted directly from outside, and thought to be "insane," or "threatened with insanity," present the same or analogous symptoms. The state of mind and of body of such patients is exceedingly delicate, and errors in management may be productive of injury; whereas, on the other hand, proper treatment results in prompt restoration of health. If a concrete illustration be needed, the cases of mental disturbance incident upon childbirth may be mentioned, of whom eight were received during the year.

In the presence of physical disease, underlying the mental symptoms, is found the opportunity for the work of the hospital and the appeal for medical care. As in other constitutional disorders, the principles of nursing as now elaborated are especially needed. The general training which the nurses receive is utilized to the benefit of the patient, following the well-directed application of the rules of nursing, the greatest modern resource for the restoration of normal function of the body. Emphasis is thus placed upon the physical basis of acute mental disorders without neglect of mental or moral therapeutic measures. The training of nurses is completed by this experience. It is taught that active and often aggressive manifestations are usually based upon fear, and the conduct of patients who appear hostile is assumed to arise from some overpowering dread of harm, the result of erroneous impressions of the special senses acting in a brain incapable of rational interpretation. To meet a difficult situation with patience and self-restraint may reasonably be exacted of the nurse. It is pleasant to be able to report that the standards of the Training School have a higher aim than this, and that the nurses undertake their often disagreeable duties with enthusiasm and with a demonstration of sympathy which has its favorable influence upon the patient. The effect is a tangible one. A scheme of rigid therapeusis appeals naturally to the sense of propriety of both physician and nurse, but is often ill-advised. The apprehensions of the patient must first be removed, particularly during the few days after arrival, and

measures of relief are begun with caution until some degree of acquaintance and confidence is developed. This task of softening the shock of removal from home is enjoined upon the nurses, and their success is in the highest degree creditable to themselves and to the humane spirit of the Training School.

In like manner the members of the medical and surgical staff have given ungrudgingly of their time and skill in the treatment of complications which demand special knowledge and technique. Valuable assistance has been freely granted by the department of the eye and ear, nose and throat, skin, gynecology, obstetrics, radiography and by the surgeons. The demands upon the Bender Hygienic Laboratory are gradually increasing. Recent advances in bacteriology, particularly revelations of certain toxic conditions of the blood and cerebro-spinal fluid, lead to more exact diagnosis and therapeusis. Certain procedures, a few years ago experimental and theoretical, have now attained an established place as routine measures, and for these the resources of a fully equipped laboratory are needed. The increasing demands upon the Bender Laboratory have been cheerfully met, and an impetus has been given to investigation by the discovery of certain specific bacteriological conditions in patients not presenting characteristic clinical symptoms. This suggests a wider and more accurate therapeusis, from which better results may be expected.

The department for mental diseases has thus gradually become an essential element of the hospital system. It is intimately interwoven with the general administration, and shares with other departments the common aim and unity of purpose, that every facility may be given for the treatment of any sick person. It has been demonstrated here that a large number of mental ailments have a claim upon the general hospital, and as their pathological origin has become prominent the old superstition of some mysterious dispensation of nature has gradually yielded to the modern revelations of science. This knowledge, for so many years limited to the few, has become general. If our efforts at first were an experiment, they have now revealed a duty, that the unusual and unique opportunity afforded by the splendid equipment of the hospital and the affiliated Bender Laboratory should be utilized for the benefit of these patients.

DISCHARGES.

Of the three hundred and ten patients discharged, sixty-three recovered and one hundred and one were improved. The percentage of cases distinctly benefited is fifty-three. Since the opening of the Pavilion the percentage of cases discharged as recovered and improved has been fifty-four. Of the twenty-seven hundred and seventy-nine patients admitted in the eleven years, fourteen hundred and eighty-one patients have returned to their homes with health restored. One hundred and fourteen patients were discharged unimproved, and thirty died. The causes of death were: exhaustion of acute alcoholic delirium, three; tuberculosis, seven; pneumonia, three; pleurisy, one; nephritis, one; meningitis, two; heart disease, one; old age, five; exhaustion of acute mental disease, two; jaundice, one; strangulated hernia, one; septicaemia, one; erysipelas, one; gangrene, one.

FINANCIAL STATEMENT

Received from public patients.....	\$1,346 00
Received from private patients.....	10,527 67
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Total.....	\$11,873 67
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The number of day's treatment.....	7,931
The average income for each patient per week.....	\$10 48
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ACKNOWLEDGMENT

The daily operation of the Pavilion rests largely upon the relations with the officials of the city and county. To the Commissioner of Charities and Corrections, Hon. William H. Storrs, is due more than formal acknowledgment of intelligent co-operation. Our debt to him is an annually increasing one, as wise discrimination is required in consideration of applications for admission.

Friends of the Pavilion have manifested abundant interest. The collection of books has been again replenished by the kindness of Mrs. Martin H. Glynn who sent in June, nine-

teen volumes of popular fiction. Magazines have been received from Mrs. David A. Thompson and Mrs. Eugene W. Lytle, and the subscription to McClure's, which has been enjoyed for several years, was renewed by "a friend." Cut flowers were sent by Mrs. E. T. Wilsden, and two framed pictures were received from the Albany Chamber of Commerce.

THE INCIDENCE OF RENAL INVOLVEMENT IN PULMONARY TUBERCULOSIS.

Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., May 1, 1913.

By HARRY S. BERNSTEIN, M.D.,
Bender Hygienic Laboratory, Albany, N. Y.

The presence of microorganisms in the urine of septicaemic cases has given rise to the view that bacteria pass through kidney substance. Organisms, identical with those recovered from the blood stream, have been obtained by urinary cultures. Examples of this fact have been encountered in post-partum infections due to the colon bacillus and streptococcus as well as in typhoid fever. The absence of albumen and of pus cells in many such urines indicates the non-involvement of renal tissue.

Of late years, pulmonary tuberculosis has been associated with a septicaemic process. The earlier work of Rosenberger (1) in 1909 was confirmed by Mendenhall and Petty (2). These authors claim to have found acid-fast bacilli, consistent with tubercle bacilli, in smears of venous blood taken from cases of pulmonary tuberculosis. Liebermeister (3) determined the presence of the bacilli in the blood of sixty per cent of advanced cases of the disease by guinea-pig inoculation. Hilgermann and Lossen (4) obtained positive blood smears in twenty-five per cent of pulmonary cases, both in the incipient and advanced stages. Ranstrom (5) reported the finding of the tubercle bacillus in the blood of nine out of thirty-six cases. The nine positive cases were all in the third stage of the disease. Eight came to autopsy, and these failed to show miliary lesions. Dailey (6), however, in his work was unable to prove the above

mentioned claims. His summary is as follows: "Blood from seventeen cases of tuberculosis (two of miliary and fifteen of advanced tuberculosis) inoculated into guinea-pigs failed in every instance to produce the slightest evidence of the disease. Stained smears of the blood from the seventeen cases showed occasionally bodies resembling tubercle bacilli."

The question of a tubercle baccilluria, concomitant with pulmonary disease, was approached by Cunningham (7). By inoculating guinea-pigs with the urines of sixty-six cases of advanced tuberculosis of the lungs, he found that six yielded positive results. Subsequent inoculation did not corroborate the findings in four. Cunningham concludes, therefore, that "it is not common for the bacillus of tuberculosis to be eliminated in the urine in individuals with the usual form of tuberculosis." The possibility, however, of the elimination of tubercle bacilli through a non-tuberculous kidney was indicated by Barney and Young (8). They reported a case of pulmonary tuberculosis, the urine of which gave a positive result upon guinea-pig inoculation. Autopsy revealed only a chronic glomerulonephritis. An analogous case, a nephrectomy, was recorded by Bolognesi (9). The kidney showed no definite lesions; and yet the urine contained pus cells and acid-fast bacilli. In microscopic sections of kidney tissue, stained appropriately, the bacilli were evident. This observation is advanced by Bolognesi as proof of the passage of tubercle bacilli through the kidneys. The foregoing experiences—that of the alleged finding of tubercle bacilli in the blood stream of tuberculous subjects and of finding them, also, in the urine of apparently non-tuberculous kidneys suggested our experimental work. A larger series of pulmonary cases was taken, with a view to determine the incidence of a tubercle bacilluria. One hundred cases with pulmonary lesions in all stages were thus selected. Each of them showed the presence of the tubercle bacillus in the sputum.

Technique.—A morning specimen of urine was received from each patient in a sterile Ehrenmeyer flask. In about three-quarters of the cases, it was possible to obtain a catheter-specimen. The urine was allowed to stand twenty-four hours. The upper layers were then decanted off into a beaker; and the remainder was centrifuged at the rate of twenty-five hundred

revolutions per minute. The decanted portion was submitted to the routine chemical examination; and a microscopic examination was made of the sediment. Smear preparations of the sediment were also stained by the Ziehl-Neelson method. In this process, the decolorization with ninety-five per cent alcohol was prolonged. Finally the entire centrifugalized sediment was injected subcutaneously into two guinea-pigs. One of the animals was killed at the end of four weeks, the other at the end of six weeks. In certain instances, the killing of the second animal was postponed to the end of the eighth week. The organs were then examined grossly and microscopically for the presence of tuberculosis. The following tabulation indicates the grouping of the patients whose urines were examined in the manner described above:

TABLE I.

Grouping of Cases According to Stage of Disease.

Group A.	Group B.	Group C.	Total.
Incipient.	Moderately advanced.	Far advanced.	
Males..	8	36	38
Females	3	3	12
—	—	—	—
Total.	11	39	50
			100

TABLE II.

Cases in Which Tubercle Bacilli were Found in the Urine.

Group A.	Group B.	Group C.	Total.
Incipient.	Moderately advanced.	Far advanced.	
Males..	0	4	5
Females	0	0	1
—	—	—	—
Total.	0	4	6
			10

It appeared, therefore, that ten urines of our series (or ten per cent) were positive for tuberculosis; that the cases which clinically belonged to the moderately advanced group contributed four per cent, and the far advanced group six per cent. The minimum age of these patients was twenty-four years, the maximum fifty years. The minimum duration of the pulmonic

process was one year, the maximum nine years. Four of the ten positive urines showed the presence of albumen and epithelial cells. One of these contained in addition large numbers of pus cells. Six urines were negative for albumen and contained few cellular elements, but in two of the specimens only a moderate number of pus cells were found in addition.

Tubercle bacilli were seen in one of the smear preparations of the sediment. It is noteworthy that the organisms were passed in a urine which had no albumen and only a rare epithelial cell. It may be added that during the past two years fourteen urines of those, submitted for diagnostic inoculation, were positive for tuberculosis. In three of the number tubercle bacilli were identified. Our laboratory experience, therefore, indicates that the organisms have been observed in four out of twenty-four urines (or 16.6 per cent) which subsequently produced tuberculosis in guinea-pigs. Our findings are in accord with those of Kuster's and Wagner's (10) whose percentage varies from ten to twenty; but are not as high as Rovsing's (11) who reports the observation of tubercle bacilli in 80.7 per cent of smears from tuberculous urines.

Control inoculation of urines from our positive series was rendered impossible in five patients owing to death. Two patients refused ureteral catheterization, but second specimens of bladder urines proved positive for tuberculosis. In each of the urines, albumen and cellular elements were absent. The remaining three patients permitted cystoscopy. I am indebted to Dr. John F. Southwell for the following reports:

CASE No. 18. Bladder, right and left meatus—Normal.

Urine—Clear.

Secretion—Spurting normally.

Both ureters show obstruction 5 cms. from the meati, due to prostatic enlargement.

The urine from each kidney, upon guinea-pig inoculation, was positive for tuberculosis.

CASE No. 22. Bladder—Mucosa—Normal. Ulceration—Superficial.

Right and left meati—Normal.

Contraction—Normal.

Urine—Clear.

Secretion—Spurting normally.

Ureters—Normal.

The sediment from the left kidney contained lymphocytes and tubercle bacilli, and produced tuberculosis in the guinea-pig.

The sediment from the right kidney showed no organisms and was negative for tuberculosis upon inoculation.

CASE No. 34. Bladder—Normal.

Contraction—Normal.

Urine—Clear.

Secretion—Spurting normally.

Left meatus—Normal. Contraction—Absent.

Right ureter—Length 34 cms. Urine flows normal and is turbid.

Left ureter—Length 34 cms. Flow of urine is absent.

The guinea-pig, inoculated with the specimen from the right kidney, became tuberculous.

The control inoculations, therefore, furnished definite evidence of the kidneys as the direct source of the bacilluria in three per cent of the cases, as compared with ten per cent, based on presumptive evidence. It must be emphasized that no lesions were discernible in the cystoscopy of the three patients. Moreover, none of the ten patients presented subjective symptoms referable to the urinary organs. Fenwick (12) has stated. "Bladder irritability is the sentient expression of a suffering kidney." This irritability was absent. It is to be recalled that six of the ten positive urines had no albumen, and only three had pus cells in numbers.

The question whether the tubercle bacilluria is the result of renal involvement invites solution. The lack of symptoms in the patients, the absence of albumen, and of pus cells in the majority of the urines, and the negative bladder findings in three may indicate the non-involvement of kidney tissue. This cannot be stated with certainty. Corner (13) has reported a case of a nephrectomy in a boy age ten. The entire kidney was tuberculous and yet the urine was negative. Moreover, the absence of symptoms and of physical signs does not rule out the possibility of an existing pathological process. This holds particularly true of the kidney. In this organ, the lesions may vary from microscopic to macroscopic dimensions. The microscopic lesions may be so few in number as to escape detection. The breaking down of a miliary or conglomerate tubercle and the discharge of its contents into a uriniferous tubule is indicated by the presence of inflammatory cells in the sediment. In this connection, the chance findings by Dr. Mallory are of unusual importance. In

sections of kidney, histologically normal, tubercle bacilli were observed within endothelial cells of the glomerular tufts. The tissue reaction, usually associated with tuberculosis, was absent. Examples of this kind lend support to the view of an acquired immunity or increased resistance on the part of the individual. Consequently, the phagocytic power of the endothelial cells for bacteria is increased; and the activity of these cells within the capillaries of the glomeruli may account for the presence of organisms in the urine in a septicaemia. This may explain, therefore, a tubercle bacilluria occurring in pulmonic disease without albumen or exudative cells in the urine.

To control our clinico-pathological findings, resort was made to the post-mortem records of the Bender Hygienic Laboratory. These included three hundred and twenty-one cases of pulmonary tuberculosis, grouped as follows:

TABLE III.

Active pulmonary process with negative kidneys.....	141
Healed pulmonary process with negative kidneys.....	141
Pulmonary process associated with tuberculous kidneys....	10
Acute miliary tuberculosis.....	29
<hr/>	
Total	321

Deducting the cases of acute miliary tuberculosis from the total number leaves two hundred and ninety-two cases of pulmonary tuberculosis with ten tuberculous kidneys or 3.4 per cent. Six positive kidneys were in males. In four the disease was bilateral, in one it was right-sided; and in one other, it left-sided. The remaining four positive kidneys were in females—in two of which, there was bilateral involvement. It was unilateral, right and left respectively, in the other two cases.

SUMMARY.

One hundred urines from cases of pulmonary tuberculosis were examined for the presence of the tubercle bacillus, by guinea-pig inoculation.

Ten (or ten per cent) produced tuberculosis in guinea-pigs.

Symptoms referable to the urinary tract were absent in each case.

Subsequent inoculation in five of the cases corroborated the first findings.

Six of the positive urines were negative for albumen.
Three urinary sediments contained pus cells.

Cystoscopy of three cases revealed no pathological condition of the meati. In one case of the latter, the urine from each kidney produced tuberculosis in guinea-pigs. In the other two, only one kidney was positive for tuberculosis.

Post-mortem records showed a percentage of 3.4 of kidney involvement in pulmonary tuberculosis.

It is a pleasure to record the assistance of Dr. John F. Southwell and of Mr. John F. Byrnes, undergraduate of the Albany Medical College. My thanks are due Drs. Howard Van Rensselaer and Erastus Corning of the Albany Hospital Tuberculosis Sanatorium, and Dr. H. W. Carey of the Lakeview Sanatorium, through whose kindness this work was made possible.

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Editorial

The surgeon, or he who assumed the office, appeared to unite the characters of a leech and a conjuror. He was an old smoke-dried Highlander, wearing a venerable grey beard, and having for his sole garment a tartan frock, the skirts of which descended to the knee, and, being undivided in front, made the vestment serve at once for doublet and breeches. He observed great ceremony in approaching Edward; and though our hero was writhing with pain, would not proceed to any operation which might assuage it until he had perambulated his couch three times, moving from east to west, according to the course of the sun. This,

which was called making the *deasil*, both the leech and the assistants seemed to consider as a matter of the last importance to the accomplishment of a cure; and Waverley, whom pain rendered incapable of expostulation, and who indeed saw no chance of its being attended to, submitted in silence.

After this ceremony was duly performed, the old Esculapius let his patient's blood with a cupping-glass with great dexterity, and proceeded, muttering all the while to himself in Gaelic, to boil on the fire certain herbs, with which he compounded an embrocation. He then fomented the parts which had sustained injury, never failing to murmur prayers or spells, which of the two Waverley could not distinguish, as his ear only caught the words *Gaspar-Melchior-Balthasar-max-prax-fax*, and similar gibberish. The fomentation had a speedy effect in alleviating the pain and swelling, which our hero imputed to the virtue of the herbs or the effect of the chafing, but which was by the bystanders unanimously ascribed to the spells with which the operation had been accompanied. Edward was given to understand that not one of the ingredients had been gathered except during the full moon, and that the herbalist had, while collecting them, uniformly recited a charm, which in English ran thus:

Hail to thee, thou holy herb,
That sprung on holy ground!
All in the Mount Olivet
First wert thou found.
Thou art boot for many a bruise,
And healest many a wound;
In our Lady's blessed name
I take thee from the ground.

Waverley.

SIR WALTER SCOTT.



The association of medicine with the church An XVIIIth was at one time intimate, particularly when Century Emmanuel the learning of the world was concentrated in Movement. the monastery. But as the light of science dawned the empirical practice of the clergy diminished, and the two professions became distinct and independent. It is not strange that there should have been revival of old theories from time to time, particularly as the advances of science have been slowly evolved, and there is much of experiment in the healing art. But a sensation of surprise may be

excused when return to mediaeval thought is observed in a learned profession, and attempts at the practice of medicine are again assumed by the clergy. Such temporary and abortive revival has been witnessed within a few years in our own American centre of culture, and the discovery of a rare book has brought to light a somewhat similar "movement" a century and a half ago. It is little known that John Wesley felt called upon to issue a book upon therapeutics, for his fame rests upon his great ardor and success in preaching. Such, however, is the case, and his collection of the household remedies of his day is no less startling than his severe criticism of the ignorance and commercial instincts of contemporary physicians.

The opportunity to read this book is afforded by Dr. Merrill, and from the fact that it reached at least a twenty-first edition, its influence must have been felt. The quaint title page is as follows:

Primitive Phyfic:

O R

AN EASY AND NATURAL METHOD

O F

C U R I N G

M O S T

D I S E A S E S.

By JOHN WESLEY, M. A.

Homo sum; humani nihil a me alienum puto.

THE TWENTY-FIRST EDITION.

PHILADELPHIA:

PRINTED BY PRICHARD & HALL, IN MARKET STREET,
AND SOLD BY JOHN DICKINS, IN FOURTH STREET.
NEAR RACE STREET.

M. DCC. LXXXIX

The author's reason, or excuse, for this departure from the demands of his calling, and these, as is universally known, were most exacting, are set forth in the preface. This introduction is conspicuous in its clarity, and the clever outline of the evolution of medicine, justifies its reproduction. Especially interesting are those illogical paragraphs, disparaging specialization and the evolution of the physician as arising from the injection of theory and from the search for relations of cause and effect.

WHEN man came first out of the hands of the great Creator, clothed in body as well as in soul, with immortality and incorruption, there was no place for physic, or the art of healing. As he knew no sin, so he knew no pain, no sickness, weakness, or bodily disorder. The habitation wherein the angelic mind, the *Divinæ particula Auræ* abode, though originally formed out of the dust of the earth, was liable to no decay. It had no seeds of corruption or dissolution within itself. And there was nothing without to injure it: Heaven and earth and all the hosts of them were mild, benign and friendly to human nature. The entire creation was at peace with man, so long as man was at peace with his Creator. So that well might "the morning stars sing together, and all the sons of God shout for joy."

2. But since man rebelled against the Sovereign of heaven and earth, how entirely is the scene changed! The incorruptible frame hath put on corruption, the immortal has put on mortality. The seeds of weakness and pain, of sickness and death, are now lodged in our inmost substance; whence a thousand disorders continually spring, even without the aid of external violence. And how is the number of these increased by every thing round about us? The heavens, the earth, and all things contained therein, conspire to punish the rebels against their Creator. The sun and moon shed unwholesome influences from above; the earth exhales poisonous damps from beneath; the beasts of the field, the birds of the air, the fishes of the sea, are in a state of hostility: the air itself that surrounds us on every side, is replete with the shafts of death: yea, the food we eat, daily saps the foundation of the life which cannot be sustained without it. So has the Lord of all secured the execution of his decree,—"Dust thou art, and unto dust thou shalt return."

3. But can there nothing be found to lessen those inconveniences, which cannot be wholly removed? To soften the evils of life, and prevent in part the sickness and pain to which we are continually exposed? Without question there may. One grand preventive of pain and sickness of various kinds, seems intimated by the great Author of nature in the very sentence that entails death upon us: "In the sweat of thy face shalt thou eat bread, 'till thou return to the ground." The power of exercise, both to preserve and restore health, is greater than can well be conceived: especially in those who add temperance thereto; who if they do not confine themselves altogether to eat either "bread or the

herb of the field," (which God does not require them to do) yet steadily observe both that kind and measure of food, which experience shews to be most friendly to health and strength.

4. 'Tis probable, physic, as well as religion, was in the first ages chiefly traditional: every father delivering down to his sons, what he had himself in like manner received, concerning the manner of healing both outward hurts and the diseases incident to each climate, and the medicines which were of the greatest efficacy for the cure of each disorder. 'Tis certain, this is the method wherein the art of healing is preserved among the Americans to this day. Their diseases are indeed exceeding few; nor do they often occur, by reason of their continual exercise, and ('till of late) universal temperance. But if any are sick, or bit by a serpent, or torn by a wild beast, the fathers immediately tell their children what remedy to apply. And 'tis rare, that the patient suffers long; those medicines being quick, as well as, generally, infallible.

5. Hence it was, perhaps, that the ancients, not only of Greece and Rome, but even of barbarous nations, usually assigned physic a divine original. And indeed it was a natural thought, that HE who had taught it to the very beasts and birds, the Cretan Stag, the Egyptian Ibis, could not be wanting to teach man,

Sanctius his animal, mentisque capacius altæ:

Yea, sometimes even by those meaner creatures: for it was easy to infer, "If this will heal that creature, whose flesh is nearly of the same texture with mine, then in a parallel case it will heal me." The trial was made: the cure was wrought: and experience and physic grew up together.

6. And has not the Author of nature taught us the use of many other medicines, by what is vulgarly termed accident? Thus one walking some years since in a grove of pines, at a time when many in the neighboring town were afflicted with a kind of new distemper, little sores in the inside of the mouth, a drop of natural gum fell from one of the trees on the book which he was reading. This he took up, and thoughtlessly applied to one of those sore places. Finding the pain immediately cease, he applied it to another, which was also presently healed. The same remedy he afterwards imparted to others, and it did not fail to heal any that applied it. And doubtless numberless remedies have been thus casually discovered in every age and nation.

7. Thus far physic was wholly founded on experiment. The European, as well as the American, said to his neighbor, Are you sick? Drink the juice of that herb, and your sickness will be at an end. Are you in a burning heat? Leap into that river, and then sweat till you are well. Has the snake bitten you? Chew and apply that root, and the poison will not hurt you. Thus ancient men, having a little experience, joined with common sense, and common humanity, cured both themselves and their neighbours of most of the distempers, to which every nation was subject.

8. But in process of time, men of a philosophical turn were not satisfied with this. They began to inquire how they might account for these

things? How such medicines wrought such effects? They examined the human body, and all its parts; the nature of the flesh, veins, arteries, nerves; the structure of the brain, heart, lungs, stomach, bowels; with the springs of the several kinds of animal functions. They explored the several kinds of animal and mineral, as well as vegetable substances. And hence the whole order of physic, which had obtained to that time, came gradually to be inverted. Men of learning began to set experience aside; to build physic upon hypothesis; to form theories of diseases and their cure, and to substitute these in the place of experiments.

9. As theories increased, simple medicines were more and more disregarded and disused; till in a course of years the greater part of them were forgotten, at least in the politer nations. In the room of these, abundance of new ones were introduced by reasoning, speculative men; and those more and more difficult to be applied, as being more remote from common observation. Hence rules for the application of these, and medical books, were immensely multiplied; till at length physic became an abstruse science, quite out of the reach of ordinary men.

10. Physicians now began to be had in admiration, as persons who were something more than human. And profit attended their employ, as well as honour; so that they had now two weighty reasons for keeping the bulk of mankind at a distance, that they might not pry into the mysteries of the profession. To this end they increased those difficulties by design, which began in a manner by accident. They filled their writings with abundance of technical terms, utterly unintelligible to plain men. They affected to deliver their rules, and to reason upon them, in an abstruse and philosophical manner. They represented the critical knowledge of anatomy, natural philosophy (and what not?) Some of them insisting on that of astronomy, and astrology too) as necessarily previous to the understanding the art of healing. Those who understood only, how to restore the sick to health, they branded with the name of empirics. They introduced into practice abundance of compound medicines, consisting of so many ingredients that it was scarce possible for common people to know which it was that wrought the cure: abundance of exotics, neither the nature nor names of which their own countrymen understood: of chymicals, such as they neither had skill nor fortune, nor time to prepare: yea, and of dangerous ones, such as they could not use, without hazarding life, but by the advice of a physician. And thus both their honour and gain were secured: a vast majority of mankind being utterly cut off from helping either themselves or their neighbors, or once daring to attempt it.

11. Yet there have not been wanting, from time to time, some lovers of mankind, who have endeavoured (even contrary to their own interest) to reduce physic to its ancient standard: who have laboured to explode out of it all hypotheses, and fine-spun theories, and to make it a plain intelligible thing, as it was in the beginning: having no more mystery in it than this, "Such a medicine removes such a pain." These have demonstrably shewn, That neither the knowledge of astrology, astronomy,

natural philosophy, nor even anatomy itself, is absolutely necessary to the quick and effectual cure of most diseases incident to human bodies: nor yet any chymical, or exotic, or compound medicine, but a single plant or root duly applied. So that every man of common sense (unless in some rare cases) may prescribe either to himself or his neighbour; and may be very secure from doing harm, even where he can do no good.

12. Even in the last age there was something of this kind done, particularly by the great and good Dr. Sydenham: and in the present, by his pupil Dr. Dover, who has pointed out simple medicines for many diseases. And some such may be found in the writings of the learned and ingenious Dr. Cheyne; who doubtless would have communicated many more to the world, but for the melancholy reason he gave one of his friends, that pressed him with some passages in his works, which too much countenanced the modern practice, "O Sir, we must do something to oblige the faculty, or they will tear us in pieces."

13. Without any regard to this, without any concern about the obliging or disobliging any man living, a mean hand has made here some little attempt, towards a plain and easy way of curing most diseases. I have only consulted herein, experience, common sense, and the common interest of mankind. And supposing they can be cured this easy way, who would desire to use any other? Who would not wish to have a physician always in his house, and one that attends without fee or reward? To be able (unless in some few complicated cases) to prescribe to his family, as well as himself.

14. If it be said, But what need is there of such an attempt? I answer, the greatest that can possibly be conceived. Is it not needful, in the highest degree, to rescue men from the jaws of destruction? From wasting their fortunes as thousands have done, and continue to do daily? From pining away in sickness and pain, either through the ignorance or dishonesty of the physicians? Yea, and many times throwing away their lives, after their health, time and substance?

It is inquired, But are there not books enough already, on every part of the art of medicine? Yes, too many ten times over, considering how little to the purpose the far greater part of them speak. And besides this, they are too dear for poor men to buy, and too hard for plain men to understand. Do you say, "But there are enough of these collections of receipts." Where? I have not seen one yet, either in our own or any other tongue, which contains only safe, and cheap, and easy medicines. In all that have yet fallen into my hand, I find many dear and many far-fetched medicines: besides many of so dangerous a kind, that a prudent man would never meddle with. And against the greater part of those medicines there is a further objection: they consist of too many ingredients. The common method of compounding and de-compounding medicines, can never be reconciled to common sense. Experience shews, that one thing will cure most disorders, at least as well as twenty put together. Then why do you add the other nineteen? Only to swell the apothecary's bill: nay, possibly, on purpose to prolong the distemper, that the doctor and he may divide the spoil.

But admitting there is some quality in the medicine proposed, which has need to be corrected; will not one thing correct it as well as twenty? It is probable much better. And if not, there is a sufficiency of other medicines, which need no such correction.

How often, by this compounding medicines of opposite qualities, is the virtue of both utterly destroyed? Nay, how often do those joined together destroy life, which single, might have preserved it? This occasioned that caution of the great Boerhaave, against mixing things without evident necessity, and without full proof of the effect they will produce when joined together, as well as of that they produced when asunder: seeing (as he observes) several things, which separately taken, are safe and powerful medicines, when compounded, not only lose their former powers, but commence a strong and deadly poison.

15. As to the manner of using the medicines here set down, I should advise, As soon as you know your distemper, (which is very easy, unless in a complication of disorders, and then you would do well to apply to a physician that fears God:) *First*, use the first of the remedies for that disease which occurs in the ensuing collection; (unless some other of them be easier to be had, and then it may do just as well.) *Secondly*, After a competent time, if it takes no effect, use the second, the third, and so on. I have purposely set down (in most cases) several remedies for each disorder; not only because all are not equally easy to be procured at all times, and in all places: But likewise the medicine that cures one man, will not always cure another of the same distemper. Nor will it cure the same man at all times. Therefore it was necessary to have a variety. However, I have subjoined the letter (*I*) to those medicines which some think to be infallible. *Thirdly*, Observe all the time the greatest exactness in your regimen or manner of living. Abstain from all mixed, all high seasoned food. Use plain diet, easy of digestion; and this as sparingly as you can, consistent with ease and strength. Drink only water, if it agrees with your stomach; if not, good, clear small beer. Use as much exercise daily in the open air, as you can without weariness. Sup at six or seven on the lightest food; go to bed early, and rise betimes. To persevere with steadiness in this course is often more than half the cure. Above all, add to the rest, (for it is not labour lost) that old unfashionable medicine, prayer. And have faith in God who "*killeth and maketh alive, who bringeth down to the grave, and bringeth up.*"

16. For the sake of those who desire, through the blessing of God, to retain the health which they have recovered, I have added a few plain, easy rules, chiefly transcribed from Dr. Cheyne.

I. 1. The air we breathe is of great consequence to our health. Those who have been long abroad in easterly or northerly winds, should drink some thin and warm liquor going to bed, or a draught of toast and water.

2. Tender people should have those who lie with them, or are much about them, sound, sweet, and healthy.

3. Every one that would preserve health, should be as clean and sweet as possible in their houses, clothes, and furniture.

II. 1. The great rule of eating and drinking, is, To suit the quality and quantity of the food to the strength of our digestion; to take always such a sort and such a measure of food, as sits light and easy on the stomach.

2. All pickled, or smoaked, or salted food, and all high-seasoned is unwholesome.

3. Nothing conduces more to health, than abstinence and plain food, with due labour.

4. For studious persons, about eight ounces of animal food, and twelve of vegetable in twenty-four hours is sufficient.

5. Water is the wholesomest of all drinks; quickens the appetite, and strengthens the digestion most.

6. Strong, and more especially spirituous liquors, are a certain, though slow poison.

7. Experience shews, there is very seldom any danger in leaving them off all at once.

8. Strong liquors do not prevent the mischiefs of a surfeit, nor carry it off so safely as water.

9. Malt liquors (except clear small beer, or small ale, of a due age) are exceeding hurtful to tender persons.

10. Coffee and tea are extremely hurtful to persons who have weak nerves.

III. 1. Tender persons should eat very light suppers; and that two or three hours before going to bed.

2. They ought constantly to go to bed about nine, and rise at four or five.

IV. 1. A due degree of exercise is indispensably necessary to health and long life.

2. Walking is the best exercise for those who are able to bear it; riding for those who are not. The open air, when the weather is fair, contributes much to the benefit of exercise.

3. We may strengthen any weak part of the body by constant exercise. Thus the lungs may be strengthened by loud speaking, or walking up an easy ascent; the digestion and the nerves, by riding; the arms and hams, by strongly rubbing them daily.

4. The studious ought to have stated times for exercise, at least two or three hours a-day: the one half of this before dinner, the other before going to bed.

5. They should frequently shave, and frequently wash their feet.

6. Those who read or write much, should learn to do it standing; otherwise it will impair their health.

7. The fewer clothes any one uses, by day or night, the hardier he will be.

8. Exercise, first, should be always on an empty stomach; secondly, should never be continued to weariness; thirdly, after it, we should take care to cool by degrees: otherwise we shall catch cold.

9. The flesh-brush is a most useful exercise, especially to strengthen any part that is weak.

10. Cold-bathing is of great advantage to health: it prevents abundance of diseases. It promotes perspiration, helps the circulation of the blood, and prevents the danger of catching cold. Tender people should pour water upon the head before they go in, and walk in swiftly. To jump in with the head foremost, is too great a shock to nature.

V. 1. Costiveness cannot long consist with health. Therefore care should be taken to remove it at the beginning; and when it is removed, to prevent its return, by soft, cool, open diet.

2. Obstructed perspiration (vulgarly called catching cold) is one great source of diseases. Whenever there appears the least sign of this, let it be removed by gentle sweats.

VI. 1. The passions have a greater influence on health, than most people are aware of.

2. All violent and sudden passions dispose to, or actually throw people into acute diseases.

3. The slow and lasting passions, such as grief and hopeless love, bring on chonical diseases.

4. Till the passion, which caused the disease, is calmed, medicine is applied in vain.

5. The love of God, as it is the sovereign remedy of all miseries, so in particular it effectually prevents all the bodily disorders the passions introduce, by keeping the passions themselves within due bounds. And by the unspeakable joy and perfect calm, serenity, and tranquillity it gives the mind, it becomes the most powerful of all the means of health and long life.

Although this preface breathes the divine spirit of the author, it is difficult to enter into sympathy with the conclusions, or to ignore the stupendous simplicity, which not only accepts the crude results of accidental or natural recoveries from disease, but overlooks the universal value of concentrated observation and experience. There may be doubt that the great divine would have yielded his own inspiration to the belief of the cobbler, the baker, the candle-stick maker, though he evidently accepted their nauseous remedies for the ills of the body. It is recommended, *e.g.*: for asthma, to live a fortnight on boiled carrots only; for "a settled deafness": "Take a red onion, pick out the core; fill up the place with oil of roasted almonds. Let it stand a night; then bruise and strain it. Drop three or four drops into the ear, morning and evening, and stop it with black wool." For "dull sight," it is recommended to "drop in two or three drops of juice of rotten apples often." For "weak eyes," "wash the head daily with cold water." For "raging madness" it is advised to "set the patient with his head under

a great water-fall, as long as his strength will bear: Or, pour water on his head out of a tea-kettle; Or, let him eat nothing but apples for a month."

The reverend author appears to have had faith in a few physicians and discriminates between the learned few and the crude many. He was especially pleased with those who endorsed the remedies which met with his favor. But as experience increased there entered a tone of doubt. The first preface was dated in London, June 11, 1747, and on October 20, 1780, concession was made to the "abundance of objections made to several parts," in consequence of which, many articles were omitted and many changed. The author "likewise added a considerable number of medicines . . . and several never tried before." But he still advised "in complicated cases or where life is in immediate danger, let every one apply without delay, to a physician that fears God." And so this revelation of the clerical mind of a century and a half ago is not without its parallel in our own, it is supposed, more enlightened time. With similar disparagement of the medical profession the cure of disease was undertaken by a clergyman, and his church converted into a clinic. As in the case of Wesley, a few physicians were eventually summoned to assist and the original plan barely survived the period of active advertising. Wesley's faith was particularly founded upon electricity. He wrote: "One [remedy] I must aver, from personal knowledge, grounded on a thousand experiments, to be far superior to all the other medicines I have known; I mean electricity. I cannot but intreat all those who are well-wishers to mankind, to make full proof of this. Certainly it comes the nearest an universal medicine, of any yet known in the world." The panacea of the Emmanuel Movement was hypnotism.

How strangely alike these two ventures, in attitude, in logic, in practice, and in result. They strengthen the argument for specialization, fortify our faith, and with charity for others, as we wish it for ourselves, recall the old adage, cleverly expressed in classical phrase:

Sutor ne crepidam judicaret.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.

ABSTRACT OF VITAL STATISTICS, SEPTEMBER, 1913.

Deaths.

Consumption	19
Typhoid fever	2
Scarlet fever	0
Measles	0
Whooping-cough	0
Diphtheria and Croup	0
Grippe	1
Diarrheal diseases	5
Pneumonia	2
Broncho-pneumonia	0
Bright's disease	21
Apoplexy	12
Cancer	12
Accidents and violence	8
Deaths over 70 years	32
Deaths under 1 year	22
Total deaths	158
Death rate	19.21
Death rate less non-residents	15.56

Deaths in Institutions.

	Resident.	Non-Resident.
Albany Hospital	13	12
Albany County Jail	0	0
Child's Hospital	0	0
County House	2	4
Dominican Convent	0	0
Home for the Friendless	0	0
Homeopathic Hospital	8	2
Hospital for Incurables	2	0
Little Sisters of the Poor	4	0
Penitentiary	0	0
Public Places	2	2
St. Margaret's House	4	3
Sacred Heart Convent	1	0
St. Peter's Hospital	5	4
Austin Maternity Hospital	3	0
Albany Hospital, Tuberculosis Pavilion	3	1
Labor Pavilion	0	1
St. Vincent's Female Orphan Asylum	0	0
	47	29
Births	158	
Still Births	5	
Premature Births	0	

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	59
Number of new cases.....	7
Cases returned from hospital.....	7

Total.	73
Disposition of old and new cases:	
Died.	2
Sent to hospital.....	13
Remaining under treatment.....	58

Total.	73
Number of visits made.....	114

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive.	8
Negative.	18

Total.	26
Living cases on record September 1, 1913.....	308
Cases reported:	
By card	15
Dead cases by certificate.....	7

Total.	22
Dead cases previously reported.....	12
Dead cases not previously reported.....	7
Removed.	2
Recovered.	0

Total.	330

Living cases on record October 1, 1913..... 309
 Total tuberculosis death certificates filed during September..... 19

Out of town cases dying in Albany:

Albany Hospital Camp.....	I
C. F. of L. Pavilion.....	I
County Hospital	I

City tuberculosis deaths.....	16

BUREAU OF CONTAGIOUS DISEASE.

Cases Reported.

Typhoid fever	8
Scarlet fever	0
Diphtheria and Croup.....	7
Chickenpox.	1
Smallpox.	0
Measles.	1
Whooping-cough.	0
Consumption.	25
Infantile paralysis	2
<hr/>	
Total.	44

Contagious Disease in Relation to Public Schools.

Reported
D. S.F

Public School No. 2.....	I
Public School No. 14.....	I
High School	I
Cathedral School	I
Number of days quarantine for diphtheria:	

Longest..... 19 Shortest..... 9 Average..... 15 1/15

Number of days quarantine for scarlet fever:

Longest..... 0 Shortest..... 0 Average..... 0

Fumigations:

Houses.....	29	Rooms.....	79
Cases of diphtheria reported.....			7
Cases of diphtheria in which antitoxin was used.....			6
Cases in which antitoxin was not used.....			1
Deaths after use of antitoxin.....			0

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive.	12
Initial negative.	110
Release positive.	10
Release negative.	23
Failed.	13
<hr/>	
Total.	168

Test of Sputum for Tuberculosis.

Initial positive.	11
Initial negative.	24
Failed.	1
<hr/>	
Total.	36

BUREAU OF MARKETS AND MILK.

Public market inspections.....	16
Market reinspections	78
Fish market inspections.....	2
Hide house inspections.....	3
Packing house inspections.....	1
Milk depots reinspected.....	22
Milk wagons inspected.....	77
Unclean wagons	6
Notices served	2
Lactometer tests	290
Below standard	3
Temperature tests	290
Below standard	20
Fat tests	23
Below standard	3
Sediment tests	20
Sediment found	20

MISCELLANEOUS.

Mercantile certificates issued to children.....	49
Factory certificates issued to children.....	29
Children's birth records on file.....	78
Number of written complaints of nuisances.....	42
Privy vaults	6
Closets.	4
Plumbing.	8
Other miscellaneous complaints.....	24
Cases assigned to health physicians.....	67
Calls made	142
Number of dead animals removed.....	440

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK.—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR SEPTEMBER, 1913.—Number of new cases, 152; classified as follows: Dispensary patients receiving home care, 7; district cases reported by health physicians, 1; charity cases reported by other physicians, 43; moderate income patients, 84; metropolitan patients, 15; old cases still under treatment, 142; total number of cases under nursing care during month, 294. Classification of diseases for the new cases: Medical, 25; surgical, 20; gynecological, 3; obstetrical under professional care, mothers 42, infants 44; throat and nose, 1; infectious diseases in the medical list, 17. Disposition: Removed to hospitals, 11; deaths, 3; discharged cured, 150; improved, 28; unimproved, 5; number of patients still remaining under care, 97.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 0; students in attendance, 1; nurses in attendance, 1; patients carried over from last month, 1; new patients during month, 0; patients discharged, 1; visits by head obstetrician, 0; by attending obstetrician, 0; by students, 9; by nurses, 11; total number of visits for this department, 20.

Visits of Guild Nurses (all departments).—Number of visits with nursing treatment, 1,223; for professional supervision of convalescents, 347; total number of visits, 1,570; cases reported to the Guild by 1 health physician, and 45 other physicians; graduate nurses 6, and pupil nurses 5 on duty. ,

Dispensary Report.—Number of clinics held, 85; new patients, 173; old patients, 386; total number of patients treated during month, 559. Classification of clinics held: Surgical, 12; nose and throat, 6; eye and ear, 15; skin and genito-urinary, 9; medical, 13; lung, 8; dental, 0; nervous, 0; stomach, 2; children, 14; gynecological, 6.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—The semi-annual meeting of the Medical Society of the County of Albany was held Wednesday, October 8, 1913, at 8.30 p. m. The vice-president, Dr. T. W. Jenkins delivered an address.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The regular meeting of the Medical Society of the County of Schenectady was held in the rooms of the Society, Tuesday, October 14, 1913, at 8.30 p. m.

The following papers were presented: "Modern Sanitation," Dr. H. L. Towne; "School Inspection," Dr. L. A. Gould; "Food Adulteration," Dr. B. H. Kirschberg.

THIRD DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The seventh annual meeting of the Third District Branch of the Medical Society of the State of New York was held in the Court Room, Greene County Court House, Catskill, N. Y., October 21, 1913.

Morning session, 11.45 a. m.—President's address. Robert Selden, M. D., Catskill.

Afternoon session, 2 p. m.—Meeting of delegates.

Scientific session, 2.15 p. m.—1, Asthenopia, Miles A. McGrane, M. D., Troy; 2, Laboratory Methods from the Clinician's Point of View, Harold P. Sawyer, M. D., Troy; 3, Cardiac Arrhythmia as illustrated by the Polygraph, Hermon C. Gordinier, M. D., Troy; 4, Report of a Case of Puerperal Sepsis, C. P. McCabe, M. D., Greenville; 5, The Therapeutic Use of Pituitrin, Henry F. Albrecht, M. D., Green Island; 6, Relation of Bovine Tubercle Bacilli to those of Human Varieties, L. L. Parker, D. V. M., Catskill.

Evening session, 7.30 p. m.—Public health meeting. Assembly Room, Catskill High School. Under auspices of Third District Branch of the Medical Society of the State of New York, Medical Society of the County of Greene, Catskill Village Improvement Society, Greene County Anti-

Tuberculosis Society, The Monday Club and the Humane Society of Catskill. 1, Co-operation: The Keynote of the Relation of the Department of Health to the People of the State, John W. LeSeur, M. D., Batavia; 2, Give the Baby a Fair Show, H. L. K. Shaw, Albany.

THE AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.—The eighteenth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology was held in Chattanooga, Tennessee, October 27, 28, and 29, 1913. Lieutenant Colonel R. H. Elliott, Superintendent of the Government Ophthalmic Hospital, Professor of Ophthalmology, Madras, India, delivered an oration in Ophthalmology. The meeting was largely attended and an interesting program carried out.

INTERNATIONAL CONGRESS FOR NEUROLOGY, PSYCHIATRY AND PSYCHOLOGY.—The International Congress for Neurology, Psychiatry and Psychology will be held in Berne, September 7th to 12th, 1914.

ANNUAL CONFERENCE OF SANITARY OFFICERS.—The annual Conference of Sanitary Officers will be held at the Utica Hotel, Utica, N. Y., from November 16th to 22nd, 1913.

NEW YORK SKIN AND CANCER HOSPITAL.—The Governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a fifteenth series of Clinical Lectures on Diseases of the Skin, on Wednesdays, beginning November 5, 1913, at 4:15 o'clock.

STATE TO BUILD ANTITOXIN LABORATORY.—The State Health Board has decided to purchase property at Guilderland, near Albany, on which to erect an antitoxin laboratory for the State Department of Health.

AMERICAN COLLEGE OF SURGEONS.—On November 13, 1913, will be held in Chicago the first formal meeting for the conferring of fellowships on the members of the American College of Surgeons, Sir Rickman Godlee, the President of the Royal College of England, will deliver the principal address and extend, officially, greetings to the new organization from the Councillors of the Royal College of Surgeons. President J. M. T. Finney will deliver the presidential charge and formally confer the fellowships on all members of the organization who have qualified. Honorary fellowships will be conferred on a small number of foreigners and Americans whom the Board of Regents have selected as worthy of such distinction.

SURGICAL CONGRESS.—The Clinical Congress of Surgeons of North America will convene in Chicago on November 10, and will be formally opened on the evening of that day, when the Presidential meeting will be held in Orchestra Hall. At this meeting the President-elect, Dr. Georg Emerson Brewer of New York, will be inaugurated and deliver the annual address. The presidents of the American Medical Association and the Canadian Medical Association are expected to be present at this meeting and to deliver brief addresses. On November 13, there will

be held a cancer symposium at which the cancer problem will be discussed by prominent surgeons and laymen representing various organizations.

NEW YORK STATE BULLETIN, DIVISION OF COMMUNICABLE DISEASES, August, 1913, gives the following report: Poliomyelitis, a slight increase; cancer, forty-five cases; cerebrospinal meningitis, twenty-six cases; measles, great reduction; ophthalmia neonatorum, four cases; pneumonia, decreased prevalence; scarlet fever, decreased prevalence; diphtheria, 981 cases which was a decrease as compared with July; smallpox, twenty-five cases, decreased prevalence; tetanus, seven cases; tuberculosis, 2,160 cases; typhoid fever, increased in prevalence; whooping cough, slight increase.

FOURTH INTERNATIONAL CONGRESS ON SCHOOL HYGIENE.—The Fourth International Congress on School Hygiene held at Buffalo, August 25-30, 1913, adopted the following resolutions:

Whereas, Nearly a million tuberculosis children or children strongly predisposed to tuberculosis are attending our public schools and there is hardly accommodation for 1,500 to receive instruction in the open air, and

Whereas, The Congress is convinced that the open air school is one of the most powerful agents in the prevention and cure of tuberculosis in childhood, and it has been furthermore demonstrated that nearly all climatic conditions, providing the air is dust free, lend themselves to the prevention of tuberculosis in the predisposed and the cure of the afflicted, and

Whereas, Statistics show that there are not nearly enough hospitals and sanatoriums for adults and children afflicted with pulmonary tuberculosis or children suffering with tubercular joints or bone diseases, and

Whereas, it has been demonstrated in New York and other cities that discarded vessels lend themselves admirably to transformation into all year-around hospitals and sanatoria for tuberculosis adults, sanatoria for children afflicted with joint and other types of tuberculosis, and into open aid schools for tuberculous, anaemic and nervous children.

Resolved, That the Fourth International Congress on School Hygiene petitions the United States government to place at the disposal of the various States of the Union as many of the discarded battleships and cruisers as possible to be anchored according to their size in rivers or at the seashore and to be utilized by the respective committee for open air schools, preventoria, sanatorium schools for children or hospital sanatoria for adults. Be it further

Resolved, That the Congress expresses its appreciation to the Italian government of the example it has given by consecrating three of its discarded men of war to the combat of tuberculosis. Be it further

Resolved, That this Congress expresses its sincere wish that other governments may follow the example of Italy, and be it finally

Resolved, That copies of these resolutions be presented to the American and other governments represented at this Congress.

PERSONALS.—Dr. MAURICE J. LEWI (A. M. C. '77), president of the School of Chiropody of New York will shortly issue a volume on "Chiropody."

—Dr. JOHN A. MOORE (A. M. C. '80), who has been in practice for some years in Millerton, N. Y., has recently suffered a severe attack of appendicitis.

—Dr. JOHN A. HEATLY (A. M. C. '87), is now located at room No. 15, Illuminating Building, Schenectady, N. Y.

—Dr. R. LEIGHTON LEAK (A. M. C. '98), after fifteen years' experience in the Civil and Criminal Hospitals for the Insane, has entered into private practice and will devote himself to the care and treatment of nervous and mental diseases. He is now located at 628 Gurney Building, Syracuse, N. Y.

—Dr. JOSEPH MOORE (A. M. C. '01), has been appointed first assistant physician to the New York State Hospital at Matteawan.

—Dr. MILLARD F. SHAFFER (A. M. C. '03), has removed from Richmondtown to 307 N. Main St., Gloversville, N. Y.

—Dr. JOHN P. FABER (A. M. C. '05), has been appointed chief medical examiner of the feeble-minded school children of Schenectady.

—Dr. FRANK M. NEUENDORF (A. M. C. '11), is practising at 20 S. William St., Johnstown, N. Y.

—Dr. WALTER R. GRUNEWALD (A. M. C. '12), has opened an office at Crescent, N. Y.

—Dr. JAMES H. MITCHELL, JR. (A. M. C. '12), is associated in practice with his father, Dr. James H. Mitchell (A. M. C. '81), at 173 Main St., Cohoes, N. Y.

—Dr. WILLIAM A. ACKROYD (A. M. C. '13), is practising in Saratoga.

MARRIED—Dr. MAX A. ALMY (A. M. C. '12), and Miss Daisy Lawton, at Northville, N. Y., October 16, 1913.

DIED.—Dr. J. L. ARCHAMBAULT, of Cohoes, N. Y., died at his home in that city, October 19, 1913.

Current Medical Literature REVIEWS AND NOTICES OF BOOKS

Vaccine Therapy. Its Theory and Practice. By R. W. ALLEN, M. D., B. S. (London). Late Clinical Pathologist to the Mount Vernon Hospital for Disease of the Chest; Late Pathologist to the Royal Eye Hospital; Late Gull Student of Pathology, Guy's Hospital. Fourth Edition, pp. 436. P. Blakiston's Son & Company, 1012 Walnut Street, Philadelphia. 1913.

This work will doubtless prove of valuable service to laboratory men. The preparation, standardization, and preservation of vaccines are con-

sidered in great detail. The newer modifications of the technique are well amplified; and the theories of vaccine-therapy are clearly stated. The author, however, betrays the influence of the London school. Two-thirds of the volume are devoted to therapy. The diseases of organs, or system of organs, are taken up in eight chapters. The etiological factors are discussed and emphasis is laid upon the vaccine treatment and the results of the treatment. Accordingly, frequent references are made to the literature. These embody the experience of many clinicians who report their findings, both favorable and unfavorable. Recent work has placed limitations on the applicability of vaccines; and a survey of the long list of diseases, enumerated in the contents, creates the impression that vaccines are a panacea. The book merits the attention of all those engaged in the preparation and administration of vaccines.

H. S. B.

Microbes and Toxins. By Dr. ETIENNE BURNET of the Pasteur Institute of Paris. With a preface by ELI METCHNIKOFF. Translated from the French by Dr. CHARLES BROQUET and W. E. SCOTT, M. D. Seventy-one illustrations. pp. 304. G. P. Putnam's Sons. New York and London. The Knickerbocker Press, 1912.

The writer's association with the Pasteur Institute lends authority to his exposition on microbes and toxins. The point of view which he presents is that of the naturalist. The first four chapters are devoted to a broad discussion of the morphology and physiology of microbes. The fifth and sixth chapters take up more strictly the pathogenic forms and their mode of action. The seventh, eighth, and ninth chapters consider the filtrable viruses, toxins, and venoms. In the remaining six chapters, the more recent conceptions of immunity and anaphylaxis are clearly and concisely stated; the question of vaccines, sera, and chemical remedies are also discussed. The work lacks the detail of the modern text-book on bacteriology. The naturalist's viewpoint, however, of the many and varied phenomena of bacterial life properly justifies the claim of the book to be a philosophical treatise. Accordingly, it contains much of scientific interest to the biologist.

H. S. B.

Chloride of Lime in Sanitation. By ALBERT H. HOOKER, Technical Director Hooker Electrochemical Company. 224 pp. John Wiley & Sons. New York, 1913.

This small volume represents an exhaustive study of "one of the most valuable and economical agents available for the protection of the public health." The discussion of the use of chloride of lime in water purification, sewage disinfection, street sprinkling, and in general sanitation indicates the broad scope of the work. The experiences of many

boards of health in special problems are frequently cited. Especially noteworthy are the four hundred and forty-two references to articles on every possible phase of the public health question. Each reference is accompanied with an abstract, which gives important information in a concise manner. The volume is indispensable to health officials and sanitarians.

H. S. B.

Clinical Laboratory Methods. A Manual of Technique and Morphology

Designed for the Use of Students and Practitioners of Medicine.

By ROGER SYLVESTER MORRIS, A. B., M. D. Chief of the Department of Internal Medicine, Clifton Springs Sanatorium and Hospital, Clifton Springs, N. Y. Late Associate Professor of Medicine in Washington University, St. Louis. Formerly Associate in Medicine, the Johns Hopkins University; Assistant Resident Physician The Johns Hopkins Hospital; Instructor in Medicine and Demonstrator in Clinical Medicine The University of Michigan. D. Appleton and Company, New York and London, 1913.

The title of this work will describe its nature and purpose. As the author states in the preface: "The present volume is not a text-book of Clinical Pathology: it is a manual of laboratory technique and morphology, dealing merely with methods and with morphological elements which are of diagnostic importance. It attempts to give in detail the means of detecting the abnormal in urine, gastric contents, feces, blood, sputum, and puncture fluids. Unlike the text-books, the significance of the abnormal is not discussed."

The author further states that though there is much which the student of medicine must remember, such as the significance of certain reactions and the circumstances under which certain conditions appear, it is useless to try to burden the memory with the details of the various laboratory methods, by which abnormalities are detected, and with the sources of error in the methods. No attempt has been made to include a multiplicity of methods; the author describing instead one or more of proven value. Nor have the more exact time-consuming methods of physiological chemistry been given, methods which the average clinician has not the time, if he has the ability, to employ in his daily work.

The author has well fulfilled his purpose. The book is well arranged and well written. The descriptions of methods and findings are accurate and clear. The book has been brought well up-to-date by the inclusion of all recently described technique.

Abundant reference to the literature is given as footnotes to the text, there is an excellent index, and the work is well and fully illustrated.

The book will be most valuable to anyone doing clinical laboratory work.

C. K. W., JR.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMAN, M. D., Fellow of the American Proctologic Society; Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine; Attending Proctologist, Harper Hospital, Providence Hospital, and U. J. C. Clinic, etc., Detroit, U. S. A. With one hundred and seventy-two illustrations, mostly original, including four colored plates. Second Edition, Revised and Rewritten. St. Louis: C. V. Mosby Company, 1913.

The first edition of this work, issued in 1909, was written with the hope that it might by its use simplify the diagnosis and treatment of the more common anorectal diseases and thus enable the general practitioner to approach the subject with a clearer knowledge of its importance and what it was possible for him to do to relieve conditions which have generally through the neglect and ignorance of the subject on the part of the profession as a whole been left to the quack and the irregular.

The importance of the subject is now more generally recognized as shown by the greater number of medical schools which are offering regular courses in proctology.

The author dwells upon the importance of the use of local anaesthetics in the diagnosis and treatment of diseases of this region. "Those patients . . . who have sought the advice and care of the irregular and the advertising quack, have done so on account of their dread of hospitals, general anaesthesia, and "the knife."

"Non-surgical methods are described in those conditions where they have been found of value, and the technique of operative measures has been made as simple as possible. Only those conditions which are amenable to treatment in office practice have been discussed, and the limitations of office treatment clearly set forth. For information regarding those operative measures that are only applicable under general anaesthesia, and the consideration of those diseases whose treatment requires confinement in bed, the reader is referred to the several complete works on proctology that are now available."

Included among the subjects of the various chapters of the book are Dysentery, and The Feces and their Clinical Examination. These chapters have been written by Dr. John L. Jelks of Memphis, Tenn., and Dr. George W. Wagner of Detroit, Mich., respectively.

The present edition is a complete revision of the first. Operative technique has been further simplified, new diagnostic methods added, the value of radiography in proctology illustrated with many plates, etc. Numerous new illustrations have been added.

There is a good index and the book is very fully illustrated with diagrams, drawings, photographs, and radiographs. C. K. W., JR.

The Care of the Skin and Hair. By WILLIAM ALLEN PUSEY, A. M., M. D., Professor of Dermatology in the University of Illinois. New York and London: D. Appleton and Company. 1912.

In this book the author has "undertaken to consider the skin and

its commoner disorders from the standpoint of what everyone of intelligence should know of these subjects, both because of their practical importance and as a part of one's general knowledge." His aim has been "to write a book chiefly on the hygiene of the skin, not a book on the self-treatment of skin diseases, and certainly not one to foster the mischievous habit of self-medication."

The earlier chapters are devoted to a consideration of the structure, nutrition and functions of the skin, the care of the general health as it especially relates to the skin (hygiene, diet, disturbances of digestion), the local care of the skin, inflammations of the skin in general, disorders of the face, defects in the skin. The later chapters are in like manner devoted to the structure, functions, care and disorders of the hair, with a section on the hygiene of the barber shop.

The book is well written in a readable popular style, not however sacrificing scientific accuracy, and contains much information which everyone should possess upon the subject matter. The sections upon diet and bathing are especially good, and the warning against self-medication and that promiscuously given by barbers and hair-dressers along the lines of "skin-foods," "hair-tonics," "hair-restorers," "scalp-treatments," etc., can be heartily endorsed.

Stress is laid throughout the book on hygiene and, except for simple methods along those lines, for the therapeusis of skin and hair disorders the patient is constantly urged to seek the advice and care of a physician.

In purpose, scope, and text, the book can be highly recommended.

C. K. W., JR.

The Diseases of Children. By HENRY ENOS TULEY, M. D. With One Hundred and Six Engravings and Three Colored Plates. Second Revised Edition. St. Louis: C. V. Mosby Company. 1913.

The interest of the general practitioner in the subject of diseases of children must be increasing very rapidly if one can judge from the number of textbooks on this subject. The volume before us is the second edition and is written by a southern physician. This is probably the only book on this subject written by a physician south of the Mason and Dixon line.

As might be expected, there is a very excellent chapter on malaria which can be especially recommended and also one on pellagra, which is not mentioned in the books written by the men in the northern states.

The arrangement of the book is excellent and there are very good plates and illustrations. The publishers have been a little careless in the proofreading as shown by the use of the word "intubation" where "incubation" is meant in the table of contents and there are several misspelled words in the text. In the writing of prescriptions the author has on several occasions placed some of his ingredients in Latin and others in English. This is commonly done by the average careless prac-

titioner but it should not appear in print. In the preface, the author states that the entire book was rewritten so that additions could be made of the advancements and discoveries in pediatrics since 1909. It is unfortunate that he has not mentioned the recent studies of Anderson concerning the pathogenesis and infectiousness of measles. His description of cystitis and pyelitis caused by the colon bacillus is very inadequate. We confess to disappointment over the chapter on tuberculosis and the only forms described in detail are tuberculous meningitis and tuberculous peritonitis. In the description of the fluid taken by lumbar puncture for diagnosis, no mention is made of the cellular elements which are so important in making a diagnosis. Two pages are used to describe the Calmette ophthalmic test and about half a page on the skin test, although the author states that owing to the unfavorable reports of the eye test the cutaneous method is recommended as the most desirable. The treatment of hereditary syphilis by neo-salvarsan is not mentioned. This form of medication is becoming more and more popular because it can be injected intramuscularly without causing any reaction. The author has not mentioned the use of the duodenal catheter recommended by Hess. The description of ophthalmia-neonatorum should be included in the chapter on the diseases of the new-born and not placed in another portion of the book under diseases of the eye. It would have been well to place the nutritional disorders after the chapter on infant feeding, instead of near the end of the book after genito-urinary disorders. The chapter on infant feeding is excellent and it includes a very good description of certified milk. The appendix contains a number of pages of algebraic formulae and it is doubtful if it is possible for anyone to carry these formulae in their heads, and it would take a mathematician to work them out. These pages of equations must be very disheartening to the general practitioner. This book was written, according to the author, "not for the specialist, but with the needs of the general practitioner and student in view."

Dr. Tuley has had a large experience and the description and treatment of the diseases are clear and concise and free from unnecessary verbiage. The book has many good points and should be on the shelves of the specialist's bookcase as well as those of the general practitioner.

H. L. K. S.

SURGICAL PATHOLOGY.

Edited by George E. Beilby, M. D.

*The Transplantation of Rib Cartilage into Pedunculated Skin Flaps.
An Experimental Study.*

JOHN STAIGE DAVIS. *Bulletin of the Johns Hopkins Hospital, April,
1913, Vol. XXVI, No. 266, page 116.*

In the correction of mutilations or defects, such as those which involve the ears or nose, it is often requisite to use flaps of tissue with skin on

both sides. These flaps can be secured in many ways, but Davis believes the factor of chief importance is to provide a framework to support the flap which will secure the desired contour, and at the same time prevent shrinkage. The ideal substance for this purpose is readily seen to be a material which will not act as a foreign body, one which is easily obtainable, is rigid enough for the purpose and at the same time can be shaped as desired. In seeking for some suitable tissue in the body which would fulfill these requirements, the author was led to undertake the experiments with costal cartilage, which are outlined in this article.

Twenty-four experiments were carried out on fifteen dogs. The cartilage was obtained from the cartilaginous ribs. The perichondrium was not disturbed except when shaping was done. The cartilage was either imbedded in a thin layer of subcutaneous fat, or was placed in a pocket burrowed in the subcutaneous tissue itself, or was surrounded by the skin after the subcutaneous tissue had been removed. He varied the location and shape of the cartilage in the different flaps. In some it was placed parallel to the base of the flap and in others vertically to the base and in different parts of the flap. In still others it was placed diagonally across the flap. The pieces of cartilage used varied in length from $1\frac{1}{2}$ to 7 centimeters. They were allowed to remain in the flaps from 7 to 120 days. Macroscopic examination at the end of this period showed in every instance that the squarely cut ends of the transplanted cartilage had become slightly rounded. The healing was reactionless and the cartilage did not act as a foreign body. The measurements of the cartilage when removed from the flap differed very little, if at all, from those taken at the time of transplantation.

Microscopic examination showed the transplanted cartilage surrounded by a loose connective tissue zone containing blood vessels, which were more or less abundant, according to the length of time after transplantation. The cartilage cells appeared normal and there were no signs of degeneration or absorption.

From the results which Davis has obtained in these experiments and from clinical experience he feels sure that the transplantation of rib cartilage into skin flaps is a safe and promising procedure. He suggests that cartilage can be used with advantage in otoplasty, in the restorative operations made necessary by traumatism and disease. In microtia also much can be done, by the transference of a flap thus supported, in improving the condition due to arrested development. In rhinoplasty the cartilage support can be placed in a double-faced skin flap, from a distant part when it is formed, or can be inserted after the flap is in its new position. It is especially advantageous in the correction of saddle nose.

As to the fate of the transplanted cartilage in these experiments, as far as can be seen the cartilage lives, is properly nourished and does not act as a foreign body. There has been no increase in length in any of the pieces transplanted. There is practically no absorption and there are no signs of degeneration, either macroscopically or microscopically.

The cartilage shrinks very little, if any, up to four months, which is the longest period in the series, and it seems reasonable to believe that it will continue to be nourished and will live and act as a support as long as needed.

Further Studies on the Role of the Hypophysis in the Metabolism of Carbohydrates. The Autonomic Control of the Pituitary Gland.

LEWIS H. WEED, HARVEY CUSHING and CONRAD JACOBSON. *Bulletin of The Johns Hopkins Hospital*, Vol. XXIV, No. 264.

These studies were for the most part made during the past two years in the Hunterian Laboratory of The Johns Hopkins University. They are very exhaustive and are best summarized in the author's own words "that from the results of the experiments which have been cited in this paper it is fair to assume the existence of a nervous control on the part of the sympathetic system over one form at least of the secretory activities of the pituitary body." The particular function of the gland—and presumably of its posterior lobe—on which their studies have been based concerns the elaboration and discharge of a substance capable of evoking glycogenolysis.

Provided there is a storage of glycogen available for discharge, the authors conclude that:

1. A pique of the hypophysis in the rabbit is comparable ,in its glycosuric response, to a pique of Bernard's so-called sugar center in the fourth ventricle.
2. Stimulation of the superior cervical ganglion, by faradization or even by the manipulations necessary for its exposure, causes glycosuria in the rabbit, cat and dog.
3. Stimulation of the superior cervical ganglion after exclusion of all possible downward impulses to the abdominal viscera by way of the vagi, cervical sympathetic trunks, or spinal cord, leads to glycosuria.
4. Stimulation of the superior cervical ganglion after separation of all synapses of the sympathetic system by administration of nicotine, causes glycosuria.
5. Direct faradic stimulation of the hypophysis itself, after exposure by a transphenoidal operation, gives glycosuria even after preliminary transection of the spinal cord and cervical sympathetic trunks.
6. If the posterior lobe of the hypophysis has previously been removed by operation the usual stimulation of the superior cervical ganglion fails to give glycosuria.
7. Direct faradic stimulation of the hypophysis provokes glycosuria even after transection of the spinal cord above the splanchnics.
8. A Bernard pique will likewise cause glycosuria even after transection of the spinal cord above the splanchnics.

The pituitary body, and more particularly its posterior lobe, plays a significant rôle in the metabolism of carbohydrates, and its action in

this respect is under the control of fibers which reach the gland by way of the superior cervical sympathetic ganglion. Stimulation of this nervous pathway at the so-called sugar center in the fourth ventricle, at the superior cervical ganglion, and by excitation of the pituitary body itself, liberates a chemical substance which causes glycogenolysis and glycosuria, independent of any possible nervous impulse reaching the glycogen-holding cells of the muscles or abdominal viscera.

Certain Dangers of the Adenoid Operation.

W. E. GROVE. *Bulletin of The Johns Hopkins Hospital, Vol. XXIV, No. 266.*

Grove contests the generally accepted belief that the adenoid operation is a simple and absolutely harmless procedure, and in this paper he discusses the most frequent and dangerous complications of the adenoid operation. He places these in two general groups; first, the post-operative bleeding, second, post-operative infections. His consideration of the complications in group one is dismissed with the statement that post-operative bleeding can be of a very severe nature and he quotes from the literature in two instances, recording eleven cases of fatal hemorrhage after the adenoid operation.

The second group, the infectious complications of the adenoid operation, he considers in great detail, and takes up in his discussion the following post-operative complications; fever, general sepsis, endocarditis, acute rheumatic fever, the acute infectious diseases of childhood, tonsillitis, adenitis, torticollis, lung infections and meningitis, and points out their causal connection with the bacterial content of the nose and naso-pharynx. The author reports two of his own cases in which, following the adenoid operation there was, a few days later, an infection of the accessory sinuses of the nose.

In conclusion he warns against operating when there is any infectious process present in the nose, naso-pharynx or ear, and also during local epidemics of the acute infectious diseases of childhood, especially if the patient had come into any sort of contact with children ill of these diseases. And finally, he believes that this operation should be done in a hospital, and the cases kept under observation for a considerable period of time.

Malum Perforans in Diabetes Mellitus. A Report of Seven Cases.

JOHN T. SAMPLE and W. L. GORHAM. *Bulletin of The Johns Hopkins Hospital, January, 1913, Vol. XXIV, No. 263.*

At the request of Prof. Barker the authors have made a study of the clinical aspects of mal perforant as a complication of diabetes mellitus based upon the findings in seven cases admitted to the Johns Hopkins Hospital. Two of the cases were studied by the authors personally and the details of the others were taken from the hospital

records. Their study of these cases still left the etiology of the condition in doubt. While several authors believe that the ulcer depends upon changes in the peripheral nerves, they are inclined to argue against this view from the fact that in these cases the sensory disturbances were slight, and further the ulcers did not present the same picture as that seen in known forms of chronic neuritis. The mechanical factor, they believe, has some etiologic importance, as that due to constant pressure exerted on certain parts of the feet in walking or standing. In favor of this theory is the marked improvement which in some cases follows upon rest in bed and removal of the pressure. It is probable, however, that the mechanical factor is nothing more than a contributory cause. The third theory offers vascular change as the primary cause of perforating ulcer, but in the majority of cases here reported no arterio-sclerosis, or only a slight grade, exists in the vessels leading to the part affected. Endarteritis obliterans must, however, be borne in mind. The view that the true cause lies in a disturbance of tissue vitally due to the existing hyperglycaemia seems a rational one. As a result of this lessened tissue resistance one might well explain the frequent appearance of furuncles, carbuncles and gangrene. The initial lesion is often in the form of a small vesicle which later develops into an ulcer, or the process may take its origin from an infected corn. The condition may be superficial, limited to the skin and subcutaneous tissues, or it may extend more deeply, involving bone or cartilage, or opening into a joint. The metatarsal phalangeal joint is a favorite seat for such a pathological change.

Benign Epithelial Tumors of the Thyroid Gland.

DAVID MARINE. *The Journal of Medical Research*, Vol. XXVII, No. 3, January, 1913.

The author's purpose in this paper has been to review the morphological characteristics of these tumors; to present his observations on the percentage iodin contents in relation to their anatomical structure; to offer a classification that embodies both the morphological and physiological data and, lastly, to discuss the possible bearing of these results on Cohnheim's hypothesis of tumor origin.

Approaching the subject from these angles the author has submitted the following scheme of classification. He has divided these tumors into four groups: 1. Hyperplasia from Physiologically Differentiated Thyroid (Simple or Parenchymatous Goiter). 2. Simple Adenoma. 3. Intermediate Adenoma. 4. Fetal Adenoma. Each group he sub-divides into, first, the Growing phase; second, the Involuntary phase, and third, the Colloid phase.

The relation of the percentage iodin contents to the anatomical structure and to the physiological phases of these tumors is given exhaustive study and his results may be briefly summarized as follows:

"There are all gradations between strictly non-tumor, simple parenchymatous overgrowths at one end and true fetal adenomas at the other end of the series.

"By comparing the percentage iodin contents of these tumors with their structure, a general relationship can be made out which is similar to that noted in the non-tumor overgrowths in that they have growing, involuntary, and colloid or resting phases.

Neither the structure of the tumor nor its iodin content bear any essential relationship to the non-tumor tissue of the same gland save that these tumors are not seen apart from a general hypertrophy or hyperplasia and therefore are not strictly independent growths. The most marked evidence of independence is seen in the fetal adenomas and progressively lessens toward the non-tumor hyperplasias.

Cohnheim's conception offers the best explanation of the origin of these tumors when one enlarges it to include the conception (1) that there are potential tumor anlagen formed at different physiological ages of the development of the main thyroid mass and (2) that the stimulus for tumor growth is the same as for that of the thyroid as a whole. These growths may tentatively be considered as 'partial tumors.'

Growth Centers of the Benign Blastomata with Especial Reference to Thyroid and Prostatic Adenomata.

BURTON T. SIMPSON. *The Journal of Medical Research*, January, 1913, Vol. XXVII, No. 3.

The material for the author's studies consisted of 75 thyroids obtained at autopsy without regard to age or pathological condition. In this series adenomata were found in 80 per cent of the cases. Simpson states that it is his belief that if one were to make serial sections of all thyroids after the age of puberty found in this region (Freiburg in Breisgau) they would find there adenomata in nearly every case.

He concludes that Struma nodosa is a true tumor formation; that the various forms described are different expressions of degenerated processes of these tumors. He believes that these degenerations begin at the oldest part of the tumor and therefore represent its origin or growth center as he has designated it; that these adenomata apparently occur as two primary forms, namely, parenchymatous and cystic; that the great majority are unicentric growths, although occasionally one finds two growth centers in the one capsule.

In regard to the prostatic adenomata, the author finds in reviewing the literature a great diversity of opinion regarding the genesis and pathological anatomy of the condition commonly called prostatic hypertrophy. It would appear that the more recent investigators are in accord with the view that the condition is a new growth. The author's material for this study consisted of 45 prostates obtained at autopsy, ranging from seven months to seventy-nine years of age.

The fibro-adenomata of the breast and myomata of the uterus were likewise studied. In these breast tumors as in the prostatic adenomata, the tendency of the interstitial connective tissue to undergo degenerative changes was not marked, but the author found atrophic epithelial cells surrounded with fibrous tissue which in comparison with the connective tissue in other parts of the same nodule is extremely poor in nuclei. These areas the author considers the growth centers and in rare cases one may find evidences of degeneration.

In the more rapidly growing myomata one finds, at these centers, evidences of more rapid change, viz., edema, fatty metamorphosis, circumscribed necrosis, with a subsequent tendency to calcification. All are evidences, Simpson believes, of the relative rate of growth of tumor cells, and corresponding to the original starting point of the tumor, or the "growth center" as it has been designated.

Inhibition of Hemolysis by the Serum of Cancerous Individuals.

W. O. SWEET and MOYER S. FLEISHER. *The Journal of Medical Research*,
January, 1913, Vol. XXVII, No. 3.

Kelling noted in 1906 that the serum of cancer patients possessed an increased hemolytic activity when mixed with the corpuscles of lower animals; even before this other investigators had noted that serum of cancer patients possessed hemolytic properties, but Kelling was the first to apply this test to the diagnosis of cancer. Crile, who has studied the subject exhaustively, has found that in the majority of cases of cancer the hemolytic power of the serum for human corpuscles was greater than that of the serum of normal individuals.

The inhibitory power of the serum of cancer patients has also been investigated; it has been found that hemolysis by mercury bichloride is not as strongly inhibited by the addition of cancerous serum as by the addition of normal serum. Lately Goldberger, who investigated the hemolytic action of various acids, found that the serum of patients suffering with cancer possessed a markedly higher anti-hemolytic power than the serum of normal individuals or of individuals suffering from diseases other than cancer. Sweet and Fleisher have therefore been making experiments to determine the results with both normal and cancer sera and lactic and oleic acids. Their results they give briefly as follows: In this series of experiments the authors find that the serum from eighteen cancer cases and twelve normal individuals was tested for its anti-hemolytic properties with lactic acid; eighteen cancer cases and twelve normal individuals were tested with oleic acid. In no case was any marked increase of the inhibitory power of the serum of cancerous patients evident. It therefore appears that the determination of the anti-hemolytic activity of the serum of cancerous patients cannot be used as a diagnostic method, and furthermore there is no evidence that an increased anti-hemolytic activity exists in the sera of cancerous patients; it also appears from their experiments that the anti-hemolytic property of normal individuals living under uncontrolled conditions varies within rather wide limits.

ALBANY MEDICAL ANNALS

Original Communications

ACIDOSIS.

The Vice-President's Address, delivered at the Semi-Annual Meeting of the Medical Society of the County of Albany, October 8, 1913.

BY THOMAS W. JENKINS, M. D.

This term is used to designate a condition in which acids arise in metabolism causing a pathological change, whereby bases are drawn from the body and eliminated in combination with them as relatively harmless salts, but when the organism is overwhelmed with large quantities of unneutralized organic acids toxic symptoms will then arise. The interesting feature of general acidosis is the accompanying elimination of ammonia. Ammonia is the acid indicator of intermediary metabolism, for acidosis is due either to the imperfect destruction of some metabolic product or an abnormal formation. And when we consider that the final digestive changes of proteids are amino-acids and the greater part of purin metabolics ends in uric acid with other amino-acids, that fat breaks up into fatty acids and glycerins and also that carbohydrate digestion is not free from acid production, we may well wonder how the body can escape acidosis.

(a) But the amino-acids are neutral to indicators and, in fact, may be regarded as salts since the COOH. and NH₂ groups neutralise each other and as such they do not cause acidosis. They are used by the body cells to reconstruct the proteins peculiar to themselves, and as a result of the metabolic processes of the body the proteins are again broken down into CO₂, H₂O, H₂SO₄ in combination CO(M₄H₄)N₂H₄ and creatinine being the principal final products. However, the amino-acids absorbed from the intestines are in a great measure never built into the living protoplasm but simply taken to the liver where they are converted

into urea, this is exogenous katabolism. The other kind of metabolism is constant in quantity and smaller in amount, and is due to the actual break down of protein in the body cells. This form of metabolism is endogenous, and likewise we have exogenous and endogenous acidosis. Fatty acids and glycerin are again formed into fat by the epithelial cells of the intestine, the fat then being taken up by the lacteals so that fatty acids do not normally reach the blood. The termination of carbohydrate digestion is sugar, but sugars by further oxidation yield acids of the aliphatic group and formic acid has recently been mentioned as one of those occurring in normal digestion. However, the intestinal epithelium is able to convert fatty acids into fat without the accompanying glycerine, so the body is still protected. So then for acidosis to occur, some change must have taken place whereby the glands and epithelium of the body have lost their power of producing enzymes which usually convert acids into, CO_2 , H_2O and $\text{CO}\text{N}_2\text{H}_4$ or build them up again into fat.

Acidosis occurs in many diseases, but I will only speak of exogenous acidosis, and the two forms of endogenous acidosis accompanying rheumatic affections and diabetes, and try to show how acidosis is exhibited by uranalysis. Remembering that the acidity of urine is due to $\text{Na H}_2\text{PO}_4$ which is derived from the $\text{Na}_2\text{H PO}_4$ of the blood by reaction with carbonic acid. Uric, hippuric and sulphuric acids, and when the production of acids in metabolism is excessive the organic acids appear in the urine combined with ammonia as lactate of ammonia. Exogenous acidosis occurs when amino-acids taken in from the digestive tract are not broken up, but the ammonia group NH_2 replaced by HO. Then an acid is produced which is not readily resolved into CO_2 and H_2O . The structure of amino-acids being $\text{R}-\text{NH}_2-\text{COOH}$. There are many of these and the changes may be many but usually the final one is lactic acid.

There is another manner in which exogenous acidosis occurs, and from the ease that exogenous acidosis is removed by the administration of a cathartic or a chologogue, I am inclined to think this is the usual manner. When there is a lack of bile or pancreatic secretion, the fatty acids liberated in the intestinal canal appear to be excreted in the feces in increased quantity as soaps of calcium and magnesium. Indirectly the formation of

lime soap leads to a deficiency of alkali and a compensatory elimination of ammonia. It has been shown that animals fed for long periods of time on food deficient in calcium, but rich in organic nutrients are extremely susceptible to intoxication with organic acids like lactic or oxalic. Oxalic acid may at times be formed in the intermediary metabolism of carbohydrates.

Rheumatic conditions, we usually associate with the working man, the man doing muscular work. This may not be absolutely true, however, I went to draw your attention to *inosite* muscle sugar as it is sometimes called. It is not a carbohydrate, however, belonging rather to the benzine series and is considered by some to represent a transition between the open chain of the carbohydrates and the closed ring of the aromatics. Certain bacteria have the property of converting inosite into lactic acid, and it is pretty well certified that lactic acid is the disturbing factor in rheumatism and allied conditions. It acts by withdrawing lime from the tissues, causing fibrous tissue to swell, a condition that can be demonstrated under the microscope. In the cellular elements of the body lime occurs in the nucleus in combination with phosphoric acid as one of the components of nucleic acid, and when lime is withdrawn the nucleus is destroyed. Nucleic acid yields in decomposition,

Phosphoric acid, a carbohydrate of the hexone group, adenine and guanine of the purine group, cystosine and thymine of the pyrimidine group. These are further acted upon by oxidases (enzymes) producing uric acid, and lactic acid again. The nucleus being destroyed the protoplasm of the cell then disintegrates liberating bases, which causes a remission. After sharp attacks of rheumatic pains the acidity of urine is very high, and falls during the remission as much as 100 degrees in the same day.

Diabetes has been considered by many men to be associated with rheumatism, Dr. W. Gilman Thompson of New York had considerable to say about it a few years ago, also Dr. Goodall of London, Eng., who has had a large experience in the treatment of diabetes, and who is also the professor of physiological chemistry at Middlesex, stated to me in a personal conversation that he obtained his best results when treating diabetes as a gouty diathesis, his favorite remedies being carbonate of soda and

bromide of soda. There are many theories regarding the metabolism of glucose in the human body. The one stating that glucose is formed in the turn into glycogen, stored there for a time transformed into glucose again then burned up in the muscles under the stimulation of an internal secretion from the islands of Langerhans of the pancreas, is the one best accepted.

When glucose is fermented by yeast it undergoes a change into alcohol and carbon dioxide, with some glycerol, succinic acid, lactic acid and other things according to Perkin and Kipping chemistry, and it is a well-known fact that fermentation ceases when any of its products become excessive in quantity. Lactic acid added to diabetic urine inhibits its fermentation. However, the acidosis of diabetes is due to a disintegration of fat. When the economy is unable to derive heat for the burning up of sugar it is then supposed to call upon fats and fat disintegrates into B.'Hydroxybutyric acid which is imperfectly oxidized losing water and changing to acetoacetic acid, which then loses CO₂, and appears in the urine as acetone. In severe cases of diabetes all these acid bodies may be found in the urine.

There exists in the liver a kind of antagonistic relation between glycogen and fat as a result of which fat fails to accumulate in the liver so long as glycogen is abundantly formed there and other fat depots are available. There may be a similar antagonism in other sugar-laden tissues.

When the proteid content of a cell is attacked by any noxious agency, certain molecules of the protoplasm are thrown out of function. In order to maintain its vitality, the cell now obtains its energy in the oxidation of all the carbohydrates which it controls or when this is impossible the proteid content is enriched by importation of proteid, but failing this the cell seeks the last help by attempting to recoup its losses with fat in the circulating blood, which is in turn replenished from the fat storage depots.

Very little is known of the normal katabolism of fats into water and carbon dioxide. Fr. Müller has suggested that the oxidation of the higher fatty acids goes on perfectly only when a certain proportion of sugar is simultaneously burned up, in the failure of which oxybutyric and aceto-acetic acids arise as intermediary products which cannot be burned up.

The transportation of carbon dioxide may be interfered with by changes in the blood, especially the acid intoxications. The additional acid is partly neutralized by an increased formation of ammonia but not entirely so, but some of the fixed alkalies of the blood are bound by extra acid. Thus the fixed alkalies usually serving for the transportation of CO₂ are diminished. Then the plasma becomes saturated with carbon dioxide and some is left to accumulate in the tissues, consequently, oxidation is diminished and elimination impaired. This then in short is the effect of acidosis, diminished oxidation and elimination.

Globulin is precipitated by butyric acid, and some, at least, of the antitoxic properties of blood are contained in the globulin. As vaccines are not very effectual in infections in diabetes, opsonius probably also are contained in the globulin. These conditions as well as the presence of sugar in the tissues may account for the severity of infections in diabetes.

A simple and sufficient manner of testing urine for acidity and ammonia, is to take 10 cc. of urine in a small beaker, add three grams potassium oxalate, stir until dissolved, add a few drops of at 1% solution of phenophthaliens for an indicator, titrate with N/10 Na HO solution until a faint pink color appears. The number of c.c. of alkali required times 10 equals the urinary acidity, normally 40 or 50 degrees. Now add 3 c.c. of a solution of formalin and water equal parts, then titrate until pink color returns again. Each c.c. represents .00068 grams of ammonia, multiplied by 10 gives the percentage, normally .05 per cent and the daily quantity is easily calculated if we obtain the daily amount of urine passed. Instead of percentages of ammonia, it may also be reckoned in degrees, each c.c. of alkali represent 10 degrees, 70 degrees are allowable but it is usually below 50 degrees.

SOME CLINICAL REPORTS.

Miss Y. Catarrhal jaundice. Acidity 45°, ammonia 60° = .04%.

Mr. McC. Had an attack of dizziness, nausea, vomited, headache; had to be taken from his work to a hospital. Acidity 130°, ammonia 100° = .07%. Two days later, acidity 40°, ammonia 42° = .03%.

Miss M. Insomnia, anorexid and nervousness. Acidity 150°, ammonia 60° = .04%.

Mr. S. Lumbago. Acidity 170°, ammonia 90° = .054%.

Baby W. Convulsions. Acidity 150°, ammonia 65° = .047%.

Mr. W. Synovitis after a very painful period. Acidity 210°, ammonia 70° = .047%.

Mr. B. Rheumatism. Acidity 110°, ammonia 90° = .06%. After taking sodium salicylate, acidity 40°, ammonia 30° = .02%.

Mrs. M. By way of contrast. Hyper chlorhydria. Acidity 20°, ammonia 10° = .006%. Also

Miss L. Headache, vomiting and nervous disturbance of vision. Acidity 20°, ammonia 10°. Phosphates present in urine. Later it was found this lady had a brain tumor and died. This may be of some value in diagnosing cerebral vomiting from gastric or hepatic vomiting.

Mr. H. Uraemic coma. Acidity 150°, ammonia 40° = .027%. This ammonia content seems unusual.

Mr. M. Had a bilious attack nausea and vomiting, and has had such attacks frequently. Acidity 200°, ammonia 95° = .0617%. Ten days later, acidity 20°, ammonia 10° = .0068%.

Acidosis in renal diseases I have not treated in my paper as I have not been able to satisfy myself regarding it. Usually urea is supposed to be low, consequently ammonia should be high. But in one uraemic case ammonia was low, in another with a large amounts of albumin casts and *debris*, acidity was 40 and ammonia 20, another had albumin acidity 70, ammonia 50, after alkalies acidity was 30, ammonia 10 and albumin had disappeared.

Diabetes, one case acidity 30, ammonia 20, sugar 1.6%; after vaccine, acidity 25, ammonia 10, sugar 1%.

Case 2. Acidity 70, ammonia 40; after vaccine, acidity 25, ammonia 10.

Case 3. Acidity 30, ammonia 20, sugar 2.5.

These few cases show that acidity is greater in exogenous acidosis than in endogenous, except when pain is severe in rheumatic affections.

All cases were benefited by the administration of alkalies, except the uraemic one which died.

In acidosis of defective metabolism, lime would seem to be the best alkali, and both lactic and hydroxybutyric acids seem to have affinity for it. Both these acids have the CHO_H group and HO group in two molecules of acid is replaced by one of lime, giving lime lactate or butyrate soluble salts.

HYDRIODIC ACID AS A CATALYST.

When lactic acid is treated with hydriodic acid a double reaction takes place with the result that propionic acid is formed. Animopropionic-acid is one of the common amino-acids of the

body. When the amino radicle in this particular acid is replaced by hydroxil, lactic acid results. When iodides are administered for rheumatic conditions this reaction may take place in the human economy, the body being able to add the amino radicle, and thus we have the "old alterative" effects of iodides.

Vaccines from acid producing bacteria were used, and the acidity of the urine was reduced by them, with some improvement in rheumatism.

Moulds are the organisms which break up acids and I have been able to break up weak solutions of lactic acids in a test tube with a ferment obtained from mould.

So then a determination of the acid and ammonia content of urine is useful in determining the degree of acidosis. Also it is fairly good test for hepatic efficiency and an indicator of treatment.

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PITUITRIN THERAPY.

*Read at the Seventh Annual Meeting of the Third District Branch of
the Medical Society of the State of New York, Catskill, N. Y.,
October 21, 1913.*

By HENRY F. ALBRECHT, M. D.,
Green Island, N. Y.

Since Bell in 1909 first used pituitrin, its almost wonderful efficacy in various conditions, principally obstetrical, has created a host of enthusiastic advocates.

As we look over the earlier literature on pituitrin therapy we find that practically all of it is of German origin; American investigations and observations are mostly of a later date. In this country, Quigley of Rochester before the meeting of the State Medical Society last April, reported about 25 cases, in which he used pituitrin and included in his report an up-to-date resumé of the literature. As to many of us the subject of pituitrin therapy is still a little foreign, I will take the liberty to review briefly the literature on the subject.

Leschier and Closson state that Frankl-Hochwart and Froelich should not get the credit for first directing attention to its uterine effects, but Dale who in 1907 showed the action of the hypophysis extract on the uterus. Bell, as stated above, first used it in obstetrics in 1909 and prophesied its extensive and valuable use in that department of medicine. From later investigators we learn the following:

Lewis, Miller and Matthews in their studies on the effect of pituitrin on blood pressure in animals, showed that the extract of the pars intermedia and of the pars nervosa raise the blood pressure. An extract of the posterior lobe causes a fall, then a rise in pressure. The pressor substances in the anterior lobe, are confined to that part bounding the cleft, which contains groups of cells belonging to the pars intermedia. They finally conclude that the pressor substance is secreted by the cells of the pars intermedia and passes into the pars nervosa. From these two parts making up the posterior lobe in man, the commercial extract, pituitrin is made. M'Cord observed that within a few seconds after an injection of the extract, the blood pressure rises abruptly and the heart is slowed. Tracings of the heart's action, all show a typical curve, which he designates as the "typical pituitrin curve." The initial rise persists about ten minutes. Repeated doses show a smaller elevation, until after the fourth or fifth injection, there is a depressor action. Experiments indicate that when the blood becomes saturated with pituitrin, an interaction of some kind takes place which converts the constricting action on the peripheral vessels into a relaxing one. Pankow, who applied it intravenously found a drop in the blood pressure at first, the pulse often disappearing, followed by a rapid rise in pressure. At the height of this rise, there are irregularities of pulse and variations in pressure, followed by a slowing in the respirations, lasting a few minutes, sometimes days. The second dose reveals only a slight increase in pressure. Repeated injections have a less and less effect, in other words the animal becomes "pituitrin resistant." Whereas these effects are noted after intravenous use, subcutaneously they do not occur.

These writers undoubtedly, all used it intravenously as the conclusions of Heaney would indicate. He used it intravenously

in eight puerperal women, to test its effect on blood pressure, pulse and on the secreting breast. In all his cases there was an immediate rise in pressure, accompanied by an outspoken retardation of the pulse, together with a bloodless appearance of patient and a complaint of queer feeling and dizziness. The subjective symptoms disappeared within three minutes. No unpleasant after effects were noted. Later there occurred a drop in pressure, lasting but a short time. In a normal individual an intravenous injection of pituitrin bears a striking resemblance to an attack of angina pectoris. In seventeen cases he used it intramuscularly with no variations greater than four points in pressure and six in pulse; most cases registered no change in either. In two cases of compensated valvular heart lesions, two of nephritis without high tension and a case of very high toxic blood pressure, where indications arose for its use, it was administered subcutaneously with gratifying results and no demonstrable effect on circulation. He concludes that the intravenous use should be reserved for desperate cases; that the intramuscular gives fairly rapid results and that subcutaneously for general use, it is without possibilities of harmful pressor effects.

The similarity in the pressor action of pituitrin and adrenalin led some observers, particularly Neu, to the belief that their other effects would be identical. However, Oliver and Schaeffer who were pioneers in the field, showed that, for one thing, the effect of pituitrin lasts longer than that of adrenalin. Stern also denies the identity in the effects of the two drugs and in proof of this says it has never been shown that suprarenin can cause sufficient uterine contractions to produce labor, although it has a greater pressor effect than pituitrin. Neu himself demonstrated experimentally that one cubic centimeter pituitrin causes only as much vaso constriction as suprarenin in a solution of 1-3,000,000, one cubic centimeter of which can surely not cause efficient uterine contractions. Last March Heaney advised the combination of pituitrin with a very small dose of adrenalin, whose toxicity would be lessened but good effects increased. This combination would be indicated in severe intoxications with hypotension, in tachycardia and toxic myocarditis. This synergistic use of pituitrin produces a stronger and

more prolonged ischaemia than adrenalin alone, favoring its use in eye, ear, nose and throat work. The mydriatic effect of adrenalin being counteracted by the extract of the posterior lobe. Klotz prefers the extract to adrenalin in certain conditions where the latter has been indicated, e.g., peritonitis, as it increases peristalsis and stimulates the kidneys, while adrenalin has the opposite effects. Another inducement to its use is Wray's observation showing that it is less toxic than suprarenin.

It is obvious that with these discoveries in mind, a more extensive application of pituitrin would be attempted. So we find that Hill uses it in major surgery. Having in mind Crile's definition of surgical shock as "low blood pressure," partly due to accumulation of the blood in the Splanchnic area, he has applied it in the last two and one-half years in 800 abdominal operations with but two or three cases developing shock, which he decides may have been due to overstimulation. He injects one cubic centimeter before patient leaves table, followed by one cubic centimeter every three hours, for four doses or still longer, if the blood pressure demands it. Wray used it in post operative shock, when the pulse had almost disappeared, causing it to become regular, strong and slow. Using it in this way, other benefits were observed. Klotz noted an increase in peristalsis and renal action in peritonitis. In twenty uncomplicated cases, he administered one-half to one cubic centimeter every day to overcome the temporary paralysis due to exposure of intestines during laparotomies. His results were very gratifying. Patients did not as usual complain of flatulence, for an early passage of flatus was a marked feature in every case. Hill observed the same results in his patients.

Houssay and Berati, within the last few months have used pituitrin as a purgative and compare it with hormonal. They cite several cases and have collected two hundred more from the literature. In eighty-eight per cent of these pituitrin was effective and hormonal in but seventy. The former acts rapidly and the latter only after a few hours and needs the added stimulation of castor oil to reinforce its effects. Intramuscular injection of hormonal causes a rise in temperature. Pituitrin stimulates while hormonal depresses, even causes collapse. Pituitrin has the efficiency of hormonal in peritonitis without its

inconveniences. But whereas the peristaltic action of hormonal persists for a long time, that of pituitrin lasts but one or two days, but there are no contraindications for its repetition ad libitum.

For purgative purposes the dosage is higher than in obstetrics, about three cubic centimeters per diem is usually necessary. Personally I have never observed any intestinal action following the ordinary use of pituitrin in obstetrics. The patients requiring the usual purgative the second or third day of the puerperum.

ITS ACTION AS A GALACTOGogue.

Heaney in his article of last July, contrary to the belief hitherto prevailing, states that pituitrin is not a galactagogue, but the apparent stimulus to the mammary secretion, sometimes noted after its administration is probably due to the contraction of the smooth muscle fibres in the glandular structure of the breast, and that eventually the continuance of the drug would discourage milk secretion. In this he is sustained by J. C. Edgar.

AS A DIURETIC AND BLADDER STIMULANT.

Hoskins and Means demonstrated experimentally that pituitrin in suitable dosage causes diuresis in the anaesthetized dog and that this action is due to direct stimulation of the renal cells, aided by a concomitant vasodilation in the kidneys.

Fischer, in two cases of anuria, caused urination within three-quarters to one and one-half hours after pituitrin administration. Hofstaetter used it post-operatively and in seventy-five per cent of the cases caused spontaneous urination. Edgar found it of no value in atony of bowel and bladder but he does not state his dosage nor method of administration.

In forty obstetric cases in which I used pituitrin, only one required catheterization after delivery; this may be accounted for however by the traumatism inflicted on the urethra, during the delivery of a large head by forceps.

Parisot and Spire in four cases of anuria, reported success in three. Starkenstein also noted increased urinary secretion. These observations only augment others, previously reported in other articles, such as those of Jaschke, who lauds it as a vesical tonic.

Babermann, was successful even with the oral use of hypophysis tablets in two cases of enuresis.

A decrease in pancreatic activity as well as a temporary glycosuria following pituitrin medication was noted by Lescohier and Closson, in animals, after tremendous doses. In two recent post partum cases, which had two cubic centimeters each during labor, I examined the urine for several days, but found no traces of sugar.

IN OBSTETRICS.

We now come to the field of its real usefulness, obstetrics. The investigations of Bell, Dale, Frankl-Hochwart and Frolich showed that pituitrin has the power to stimulate uterine contractions, applying it with splendid results during labor when the pains were deficient. Its ideal indication was found to be the second stage when uterine inertia supervened.

I will quote just a few of the reports found in the literature prior to 1913, as they were well reviewed by Dr. Quigley in his article, previously mentioned. Almost a thousand cases are mentioned and with a very high percentage of excellent results. Hahl reports thirty-four cases, successful in thirty-two. Hamm of Strassburg twenty-five cases with one failure. Fischer fifty cases, Richter twenty-nine cases and Hirsch thirty-five cases without any failures. Lescohier and Closson of this country had good results in all their cases. Studendy eighty-nine cases, with good results in eighty-four per cent, Vogt one hundred cases including many narrow pelvis, Voigts seventy-five and Malinowsky fifty cases, all successful. J. C. Edgar, last July reported its use in seventy cases; in thirty-nine, with inertia in first and second stage, prompt and efficient results were obtained. Quigley reports twenty-six cases with very satisfactory results.

In most of these cases, a uterine inertia indicated the use of pituitrin, in which condition, as previously stated, it is most successful. Naturally, these results led to its use in other allied conditions.

Hirsch, Schiffmann and others found it inefficient to produce abortion, but if abortion was already in progress, pituitrin assisted the expulsion of the fetus. In atony and post partum hemorrhage, Edgar, Fries, Fogel, Hofstaetter and Jaeger found

it of no value. Schmidt had good results in atony by injecting pituitrin directly into the uterus through the cervical canal. These writers found, however, that if pituitrin is used during labor, atony and post partum hemorrhage rarely occur after delivery. My experience has been the same. Fries, Brammer, Hauch and Meyer have found it of value in placenta praevia, especially placenta praevia lateralis, as it aids in arresting hemorrhage.

IN GYNECOLOGY.

Hofstaetter reports thirty-three cases of amenorrhea observed for over one year. The amenorrhea was due to primary hypoplasia of uterus and ovaries, general infantilism, atrophy of uterus following lactation, anaemia, cachectic conditions or due to slight inflammation of the adnexa. In almost two-thirds of the cases, after a few injections a typical menstruation began. But only in one-third could the menses be maintained by the continuation of the subcutaneous or oral use of the extract. Its simultaneous use orally assists the injections. Repeated doses have had no bad effects. The general condition immediately improves, even if menstruation does not set in. He also used it after castration and during the climacteric. In cases of adiposity due to ovarian atrophy as described by Cushing and others, thyroid extract should be used with the pituitrin. So far we have only a hypothetical explanation of its action. Bab used it successfully in endometritis; metritis, menorrhagia, hemorrhage due to myomata and to inflammation of adnexa. Dosage was two to three cubic centimeters daily, subcutaneously. In thirty cases of metrorrhagia, twenty-one cases stopped bleeding in two days, seven cases in a week and in two cases had no effects.

Linzenmeier advocates the use of pituitrin after pubectomy. In the clinic at Kiel where pubectomy is frequently done, he finds that most of the complications arise from instrumental delivery after this operation and that if birth is spontaneous less damage results. But while waiting for this to occur, the child is often lost. Here pituitrin works very well, the author citing two cases of its successful employment. Stolper in the same article discussing the use of pituitrin in the induction of labor at full term, when pregnancy is protracted, cites four

successful cases. It works better here, than in attempting to produce an abortion, because some uterine contractions are already existing at so late a stage in pregnancy. All his cases give histories of previous pregnancies, which were carried from one to three weeks, over the expected time.

To summarize the effects of pituitrin: (1) It acts as a general stimulant, by slowing the heart, and raising the blood pressure because of its constricting effect on peripheral capillaries, excepting those of the kidney, which it dilates. The cardio-vascular action of pituitrin, according to Spaeth, is similar to digitalis only prompter, affecting muscles, nerves and contracting the coronary arteries. (2) This constriction also effects uterine muscle, increasing the normal intermittent uterine contractions, thus shortening labor. This action increases as we approach the termination of labor, persisting to a lesser extent after the third stage. This same action makes it valuable in pathological uterine conditions. Jaeger says it works best when the cervix is four fingers dilated in primipara or two fingers in multipara. Vogt reports that in fifty cases of narrow pelvis contractions were so efficient that forceps were unnecessary. Fischer uses it in breech presentation and when there is danger of infection after intrauterine interference. (3) It is of value in preventing and combating shock. (4) The vasodilation in the kidney and the tonic effect on the involuntary muscle of the bladder, obviously suggests its use as a diuretic and vesical stimulant. (5) If abortion has already begun, pituitrin promotes it but it never induces abortion per se. (6) It is of very little, if any value as a galactagogue.

BY-EFFECTS OF PITUITRIN ADMINISTRATION.

When given subcutaneously these are entirely absent. On the contrary Fries relates cases, in which the patients, previously nervous and excited, have quieted down and even slept between pains. Even after very large doses the only after effects are apathy, somnolence and sometimes increased respirations (Starkenstein). If used intravenously an attack of angina pectoris may be simulated but this passes away rapidly. As it has been noted that after large doses the fetal heart beat is slowed, Hofbauer in seven cases of beginning intrauterine

asphyxia, administered one cubic centimeter digalen with improvement in the fetal heart beats.

DOSAGE AND ADMINISTRATION.

For obstetric purposes, I use the customary dose of one cubic centimeter of Parke-Davis or Burroughs-Wellcome pituitrin, administered subcutaneously. When demanded urgently, intramuscular or intravenous injections may be given. This dose may be repeated in an hour if necessary. If given in the first stage, it is advisable to begin with one-half cubic centimeter. The method of sterilizing the syringe, is immaterial. An ordinary hypodermic syringe and a sterile needle are sufficient for subcutaneous injections. The complaint has been justly made by Brammer, that we cannot foretell the effect of a given dose, sometimes we get no action whatever; this has been explained by Sutherland Simpson who says "although several active substances may be present in the pituitary extract, it does not necessarily follow that these same substances are being continuously or intermittently produced by the gland in the living body. . . ."

For this reason we have no standardized preparation of the physiologically active substances of the pituitary gland. Fuhrer has suggested the use of histamin, a synthetic preparation, I believe, because pharmacologically it is closely related, is chemically pure, easily obtainable and the dosage can be exact.

Gisel, in an article by Spaeth, recommends the use of pantapon with pituitrin to relieve the pains caused by the violent contractions, personally I have used morphine hypodermically for the same reason, and with the desired effect. Pituitrin, may be combined with other drugs such as ergot, without interfering with their action. Brammer used chloroform when contractions are too violent and tetanus uteri is threatened.

CONTRAINDICATIONS.

Brammer, Hauch and Meyer warn against using it in high blood pressure as they had a case die of Eclampsia after using it, but they go on to say that the patient had nephritis, and a kyphosis. Edgar, Polak, Grumann, Rieck, Voigts, and Herz have found it very dangerous in the first stage with a hard

cervix, not dilatable or a very narrow pelvis, being followed by tetanic contractions of the uterus, with asphyxiation and occasionally death of child in some cases and rupture of the uterus in others. This asphyxiation of child is explained by Spaeth, as due to compression of the placenta and overloading of blood with CO₂, on account of the continued contractions of the uterine muscle. This accounts also, for the slowing of the fetal heart frequently observed. When there is an obstruction small doses may be used to make a forceps operation easier.

REPORT OF OWN CASES.

My personal experience with the drug has been almost exclusively obstetrical. In forty cases, which, unfortunately for the value of this paper, were all vertex presentations, the results were most gratifying, without exception. My first case convinced me of the great value of this addition to our pharmacopoea. I will relate just enough case reports, to illustrate its principal uses in labor.

CASE I. Multipara, 32, previous labors normal but slow. Patient a small, slightly built woman. Had slight pains all day. At 6 P. M. I saw her, pains had remained the same, cervix fully dilatable, normal presentation, no obstruction of any kind. At 8 P. M. no advance, administered one cubic centimeter pituitrin. Within three minutes violent contractions set in, requiring a little chloroform to make them bearable. At 8.15 birth of normal child. In ten minutes spontaneous delivery of placenta. Perfect convalescence. This was a typical inertia uteri but I now know one-half cubic centimeter would have been enough in her case.

CASE II. Primipara, 35. Normal first stage but contractions later became too weak, to be of much value. One cubic centimeter administered at beginning of second stage followed by severe almost continual contractions, undoubtedly due to the obstruction formed by the rigid perinaeum to the large head. The advance was too slow in comparison to the violent contractions, so to prevent a possible tetanus uteri and rupture, I fully anaesthetized the patient and did an easy low forceps. Perfect child and normal convalescence. This case would have in any event demanded a forceps, which would probably mean a high or a median operation, but the use of the pituitrin made only the low forceps necessary.

CASE III. Primipara. Second stage, weak pains. Received two cubic centimeters in an hour, with only a slight improvement in contractions.

Finally a low forceps was done. This case was the only one requiring catheterization possibly due to some minor traumatism of urethra during delivery. It is also an illustration of the fact mentioned in the literature, that we cannot tell how a given dose will act, sometimes it may be almost inactive and at other times too violent.

CASE IV. In this case the child was asphyxiated when delivered but resuscitated after half an hour's efforts. This may have been caused by the pituitrin, although the mother had but one dose.

CASE V. Five-paras, history of easy labors. Was seen by me at 9 A. M. ruptured membranes, no pains, head almost out of reach. At 11.30 head at superior strait but freely movable, cervix soft, three fingers dilatation. Depending on the rapid action of pituitrin, I telephoned for the obstetric nurse at once. At the same time, i.e., about 12 noon administered one cubic centimeter. Slight pains set in, gradually increasing in force. At 12.45 another cubic centimeter followed by delivery in fifteen minutes. Normal convalescence. This case in the natural course of events might have taken at least a few hours longer without the pituitrin.

CASE VI. Primipara, 25. Water broke at 2 A. M., cervix one finger dilatation. Pains almost incessant, but not very efficient. Patient extremely nervous. Morphine gr. one-fourth with atropine hypodermically. At 6 A. M. four fingers dilatation one-half cubic centimeter pituitrin with another dose of morphine to quiet patient's nervous condition. Contractions improved, at 7.30 another one-half cubic centimeter. Patient was now in second stage, at 8.30 head reached perinaeum, to protect the latter the delivery was prolonged to 8.50. No after effects. Here I used a small dose in the first stage to compensate for the early loss of the amniotic fluid which would have had a retarding effect on the labor.

The remainder of the cases are all similar to one or the other of the above. As previously stated no bad effects followed its use in any of the cases, rather did it save the mothers an immense amount of suffering by shortening the labor and obviating the use of forceps or other operative interference.

The only gynecological case which I was able to follow up, after using pituitrin, was one of subinvolution. The patient reported that four weeks after confinement, she still flowed. After an examination, the diagnosis of subinvolution was made, and one cubic centimeter pituitrin administered subcutaneously. Bleeding ceased the same day, i.e., two weeks ago, and has not recurred since.

CONCLUSIONS.

1. Pituitrin is a powerful stimulant to uterine contractions in labor, the latter nevertheless retaining its physiological character.
2. Its best action is in the second stage, where it is always harmless.
3. It is of value in the first stage with sufficient dilatation of cervix and no obstruction, provided it is given in small doses, otherwise tetanus uteri may occur.
4. Fetal heart beats may become slowed, but unless labor is too prolonged, they regain their normal character.
5. The average dose is one cubic centimeter and is usually sufficient.
6. Repetition of dose is always as effectual as the first administration.
7. Effect begins three to ten minutes after use and usually lasts an hour.
8. Postpartum conditions are normal.
9. As noted previously, the contraindications are but few.
10. It is of value as a cardiovascular stimulant.
11. It shows beneficial results in amenorrhea, menorrhagia, and allied conditions.
12. It will undoubtedly be found valuable in many other conditions, when the relations of the pituitary secretion to the rest of the system receive more study.

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INFANT MORTALITY.

Address before the One Hundredth Annual Meeting of the Vermont State Medical Society, held at Burlington, Vt., October 8, 9, 10, 1913.

By HENRY L. K. SHAW, M. D.,

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The average physician does not realize his responsibility in the important work of lowering infant mortality. By his indifference he opens the portals of this important field of preventive medicine to social workers and philanthropists. This is the age of the baby. War characterized the age of man; religion the age of woman; but sacrifice and service typify the age of the child. Socrates in his wisdom wrote that "In every work the beginning is the most important part, especially in dealing with anything young and tender." It was the baby who first awakened that most wonderful and sacred force,—the mother love, and aroused that most powerful and protective influence,—the father love. The baby is the citizen of the future

and has rights we cannot afford to neglect. Dr. Newsholme of London claims that the care of the child is the index of civilization and infant mortality the most sensitive sign we possess of social welfare. Ruskin, in 1867, said that one of the most accursed signs of that day was the brutality with which it suffered the neglect of children.

The subject of eugenics is freely discussed now-a-days and people are coming to the idea that it is not our ancestry that we should worship but our posterity. A good family history is to be preferred to a large family purse when it comes to matrimony.

There is a demand to-day for better babies; not necessarily more, but healthier, stronger ones. The Honorable John Burns, the Minister of Health to Great Britain, epitomized the whole subject in a few words. "Parents should be cleanly wed, the children nobly bred, wisely fed, and firmly led."

Infant mortality is the ratio between the number of deaths under one year of age to one thousand living births. It should not be expressed in relation to the entire population or to the total number of deaths.

There is no uniformity in the methods of computing infant mortality in the different cities and states in this country or in Europe so that it is impossible to make any just comparisons. The United States census registration area only comprises 58% of the entire population. Dr. Cressy L. Wilbur, Chief Statistician of the Bureau of Census, estimates that approximately 300,000 babies die yearly in the United States before they reach the age of twelve months. In ratio to the births the infant mortality throughout the United States is 150 per 1,000 or in other words one baby in seven dies before it reaches a year old. In Great Britain the infant mortality is 130 per 1,000 living births, while in New Zealand there are only 62 deaths in every 1,000 living births. Russia on the other hand has 240 deaths and Chili 331 per thousand births. In New York State, excluding New York, the infant mortality was 121 per 1000 births, while in New York City in 1912 there were 105 deaths to every 1,000 births. In looking over the report of the Vermont State Board of Health for 1911, I find reported 7,628 births and 1,112 deaths under one year of age, making an infant mortality of

145 per 1,000 for the State. The city of Burlington had 556 births and 128 deaths so that the mortality reaches the very high number of 230 per 1,000. When you compare the mortality in New York City of 105 and of London, England, of 90, there surely must be something wrong in the care of infants in the city of Burlington, with its very high mortality of 230. When we come to estimate the number of infant deaths among the total deaths, we find there is a pretty constant ratio of 25%, that is, one out of every four deaths is that of an infant. Someone has stated that the business of being a baby should be classified as an extra hazardous occupation, and Bergeron estimated that "A baby who comes into the world has less chance to live a week than an old man of ninety, and less chance to live a year than one of eighty."

Adult deaths in a great measure are inevitable but many infant deaths are preventable. Careful students of the subject estimate that from thirty to fifty per cent of the infants' deaths are preventable, hence our stimulus for finding a remedy.

The first step in the prevention of infant mortality is a careful study of the situation. The registration of births by physicians is mandatory by law yet we all know that it is shamefully neglected. Dr. Wilbur says that "Nothing can be done in preventing infant mortality until we know where the babies are and when they arrive," and he makes the astounding assertion that most of the cities in the United States only register about one-half of the births. Dr. Goler of Rochester had for years made a determined effort to secure a complete birth registration. In order to verify his records he had copies taken of the baptismal records of several Catholic churches, which he checked up with the birth certificates in the Health Department, and found that nearly twenty-five per cent of these births had not been recorded. The error must be much greater in cities and communities where no special effort is made to secure a complete registration. The birth certificate is an actual asset to the child throughout his whole life. The prompt record of a child's birth notifies the public health authorities and in cases where the family are unable to afford adequate medical and nursing care, these can be brought at once to the mother and child. There is no doubt but that many cases of ophthalmia can be prevented by

early registration. Prompt notification of a baby's birth increases the efficiency of all public and charitable infant welfare work. The legal uses of birth registration are recognized by lawyers who often have difficulty in producing legal evidence of birth in cases of titles, insurance, inheritance, etc., etc. The new labor law in New York State requires that every child under the age of fourteen has to produce his birth certificate to prove this fact and in New York City this is also required by the public schools. In the latter city in 1911 there were nearly 12,000 certificates for birth records made and over 100,000 free statements instituted for school and employment purposes. Vermont, I am pleased to say, is one of eight states in the Union included in the Provisional Birth Registration Area of the Census Bureau. Marriages are certified, the farmer registers his calves and pigs, and the physician should be even more particular in recording the births of babies. Dr. Porter, Commissioner of Health, in a letter recently sent to the Health Officers throughout New York State regarding the birth registration law wrote, "The time for leniency has passed, and personal feelings on the part of physicians or those whose duty it is to see that the laws are obeyed must be set aside. It may as well be known now that the law must be obeyed and the proper steps for its enforcement shall be taken hereafter as violations of the law occur."

The birth rate is steadily declining in all highly civilized countries. This makes the saving of infants' lives a matter of national importance. It has been said that one of the great plagues of the Twentieth Century is the plague of empty cradles. In France the death rate is higher than the birth rate. In England in 1880 the birth rate was 35 and in 1910 it was 26. In New York State in 1860 there were 520 children under four years of age to 1,000 women of child-bearing age, and in 1910 this number had fallen to 350. In one of the exclusive residential wards in New York City, the birth rate is 4 per 1,000 while in the tenement district it is 45 per 1,000. Immigration brings up the birth rate in our country. A short time ago, some investigators collected statistics from families in the Back Bay district of Boston, taking in a territory five blocks wide and eight blocks long. They found that of the 772 families questioned, 599

had no children and that there were 373 children in the remaining 173 homes, or a proportion of over two children to each family. A closer analysis and limitation of the word 'child' to those below the age of seventeen, would reduce the number by over one-third.

A study of the causes of death during the first year of life reveals many interesting facts. One-third of the deaths occur during the first month and the number gradually diminishes month by month until the end of the first year. The largest single group are gastrointestinal disorders, including marasmus and inanition. These comprise about thirty-seven per cent of the total number of deaths. Congenital malformations, prematurity, and congenital debility form the next largest group or about thirty-two per cent. The acute respiratory diseases constitute about nineteen per cent of deaths under one year. Analyzing still further we find that the high figures of mortality occur during the months of June, July, August, and September. These deaths are mainly due to disturbances of the gastrointestinal tract, although the premature and congenitally weak infants are more apt to die during these months. Dr. Meyer of Berlin has classified the effect of the summer heat on infants; 1st, Direct; heat stroke; 2d, Indirect; including,

- (a) A lowering of the babies' tolerance,
- (b) A decrease in its immunity against disease,
- (c) A less favorable course of alimentary disturbances
- (d) An increased decomposition of its milk.

The presence of moisture in the air is of importance as it is well known that when the humidity is high the effect of the heat is more depressing. Our experience at the Infants' Hospital in Albany for the past ten years shows that the hot weather is more dangerous late in summer than in the beginning of summer because the children have lost the power of resistance.

Dr. Davis of Boston made a study of the mortality of babies fed on the breast and those artificially fed and found that in Boston one out of every thirty babies died before a year old if breast fed and one out of every five died in the first year if bottle fed. The death rate in Boston, therefore, would be sixty per cent less if all the babies were breast fed. The British Government Report on Infant Mortality in its final summary

states that the "abandonment of breast feeding without adequate cause is a most important factor of excessive infant mortality." Mothers should be instructed and encouraged to nurse their infant and doctors and nurses should insist on maternal nursing whenever possible. Deprived of its mother's milk, the baby must be artificially fed. Impure milk and tainted milk are important factors in the etiology of summer diarrheas. The milk must be carefully and zealously guarded "from pasture to pail, and from pail to palate."

Neglect, ignorance, and poverty may perhaps be called the three fundamental causes of infant mortality. Poverty means poor health for the mother, lower intelligence, lack of energy, and general inefficiency, and forces families to live in crowded unsanitary surroundings. Poverty forces mothers to work for a living, depriving their babies of breast milk. These babies are unable to thrive and develop in the poverty-stricken homes into which they are born. Infant mortality might be termed 'a class mortality' and it would seem as though intelligence, care and money purchase not alone health but life. It is excessive among the poor and low among the well-to-do. Paul Leicester Ford, in *The Honorable Peter Stirling*, says, "The future of this country depends on its poor children. We can't do too much to help them. If they are to do right, they must be saved from ill health, and ignorance and vice; and the first step is to give them good food and air so that they shall have strong little bodies." It is the duty of the State, of the community, and of the physician to give the baby of the poor a fair chance. Infant mortality should not be a question of the survival of the fittest, for it is our task to see that every baby is made fit.

Intelligent effort is being made in several of our cities to educate the mother before the baby arrives. This prenatal work should be more widely extended, not only in the cities but in the country districts. In New York City among 1,000 consecutive births in which there had been no prenatal education forty-one per cent of the babies died in the first month and there were forty-eight and six-tenths per cent still births. Among 1,000 consecutive births in which prenatal work had been carried on twenty-three and six-tenths per cent died in the first month and only nineteen and six-tenths per cent were still born.

Twenty years ago, Professor Budin in Paris appalled by the large number of deaths among infants after leaving the maternity hospital with which he was connected, inaugurated a weekly meeting of the mothers and the babies to discuss their care and feeding and give a general oversight to the babies' development. These he called Infant Consultations. This was soon followed by Professor Variot, who established stations where milk properly modified and sterilized could be furnished babies who were artificially fed. These he termed Goutte de Lait. These Goutte de Lait or Milk Depots spread like wildfire throughout civilized Europe so that now there is scarcely a city of any size in Europe in which there is not an Infants' Milk Depot.

A Public Health Commission, appointed last winter by Governor Sulzer to draft a new public health law, recommended that "Each city with a population in excess of 10,000 and having an industrial population should have one Infant Welfare Station, and that larger cities with an industrial population should have one such Station for each 2,000 inhabitants." The Infant Welfare Station is a combination of the Consultation and the Goutte de Lait and its object is more preventive than curative. The aim is to take the well child and keep it well. Mothers are encouraged to nurse their babies and when necessary are given expert medical advice. A weekly report of the babies' weight and length is kept and the mothers are instructed in the elementary principles of care, feeding, and dressing of babies. One of the most important features of these Infant Welfare Stations is the instruction of the mothers in their own homes by visiting nurses. When breast milk is not available these Welfare Stations provide clean, pure, milk adapted for the needs of each individual baby. During the past summer there were thirty such Welfare Stations conducted in cities and villages in New York State outside of New York City. The total enrollment was 3,135 babies. Of these eighty-nine died, which gives a percentage of less than three. This is two-thirds less than the general infant mortality throughout the State. The reports show that of the babies enrolled thirty-three per cent were breast fed, fifty-nine per cent bottle fed, and eight per cent mixed feeding. In one of the cities, namely Utica, these Welfare Stations were

established in the schools and the total cost for three months work, including the nurse's salary and all expenses, amounted to \$462, and as 382 babies were taken care of, it gave a cost of \$1.20 per baby or forty cents a month.

The milk problem is one that demands serious consideration on the part of the medical profession. They should be the leaders in demanding the improvement of the local milk supply and should make a study of the sources and distribution of the milk in their respective localities. Certified milk is milk produced under the supervision of local medical societies but it is not obtainable outside of the larger cities. It seems to me that local physicians could set a standard for purity, safety, and quality, which could be supplied by a local dairy. The dairyman appreciates that the physician's advice is often sought regarding milk for the baby and any intelligent dairyman would take special pains in producing milk in order to receive the endorsement of the physicians. The doctor should instruct the mother in the care of the milk in the home and point out to her the importance of keeping it constantly on the ice.

The physician can do a good deal to overcome the ignorance concerning the care and feeding of children by giving practical talks and illustrated lectures in the schools, before Mothers' Clubs and Societies. His knowledge and experience particularly adapt him for this line of educational work and he should be the leader in his community in the great work of preventive medicine.

Professor Dietrich of Berlin, in a recent address, said it was formerly believed "that the rate of mortality among children who had not reached the first anniversary of their birth was a wise dispensation of nature intended to prevent children with a weak constitution becoming too plentiful. To-day we know that a great infant mortality is a national disaster—on the one hand because numerous economic values are created without purpose and prematurely destroyed, and on the other because the causes of the high rate of infant mortality affect the powers of resistance of the other infants, and weaken the strength of the nation in its next generation."

Clinical and Pathological Notes

Report of a Case of Puerperal Sepsis. By CHARLES P. McCABE, M. D.

Presented at the Seventh Annual Meeting of the Medical Society of the State of New York at Catskill, October 21, 1913.

Mrs. G. B., age 29, primipara, good physical development, wife of a farmer, worked hard all during her pregnancy, coming up to the time of her labor, which came on in the early morning of August 30th, in good condition. Pains normal, and the first stage of labor was accomplished, in perhaps about the usual length of time. The condition then, was a completely dilated os uteri, with pains gradually diminishing, in frequency and force, in fact a condition of uterine inertia. I administered "Pituitrin" which had the effect of restoring good firm uterine contraction, but the head did not descend satisfactorily, and after waiting a reasonable length of time I applied the short forceps, and assisted nature in bringing the head down against the perineum, when I removed the forceps, nature completing the delivery within a short time. The placenta followed in about twenty minutes, to all appearances coming away entire, and clean. No force was used in its delivery.

I considered the case a thoroughly clean one, and expected no further trouble from it. On the evening of September 2nd, I found the patient with a temperature of 103 2-5 F. with some distention of the bowels, and marked tenderness over both ovaries. A good clearing out of the bowels the following morning seemed to have the desired effect of reducing the temperature, and to quite an extent, relieving the tympanitic condition. The evening of the third, gave us another marked rise in temperature, with a return of all the unpleasant symptoms, aggravated. Intra-uterine curettage, with a blunt rinsing curette, brought away what seemed to be a few small shreds of membrane. On the fourth, sixth and eighth, I used the intra-uterine douche, with no appreciable change in the condition of my patient. On the morning of the ninth, there was a severe chill followed by profuse sweating, this succeeded in the evening, by a temperature of 105 F. On the morning of the tenth a consultation was held, the consultant leaning to the belief that

there might possibly be a typhoid complication, basing his opinion upon the fact that the temperature curve for the ten days had been so like typhoid. A Widal test gave a negative result. On the morning of the eleventh, conditions looking grave, I decided not to wait for getting the report as to the blood and serum test, I administered five cubic centimeters of "Mixed Infection Phylacogen" hypodermically, which was followed by a marked reaction, viz., increased temperature, followed by profuse perspiration. This treatment I followed up, for the three succeeding days, in the same dosage, each injection being followed by a milder reaction, than the preceding dose gave. No reaction followed the fourth dose. The tympanitic condition subsided in a marked degree, after the reaction from the first dose of "Phylacogen" had passed off. Temperature never rising above normal point but once, after the last dose of "Phylacogen," and that due probably to an over-indulgence in diet, with sluggish bowels. Her recovery was uneventful, and both mother and child at this writing are in fine condition.

In obstetrical work in the country, it is absolutely impossible to have perfect asepsis in the lying-in room. This case however was as near an approach to absolute cleanliness as any that I ever attended. With my own toilet, and instruments, I was very careful. I was fortified by an efficient and painstaking nurse, who did just as she was told, never taking the initiative. But in spite of all our precautions, our patient developed the condition described (which to my mind), was one of "Puerperal Sepsis."

I am well aware that conclusions positive, should not be drawn from a single case. But, seeing this patient day after day, in the grave condition in which she was, getting no results from all my efforts for her recovery, until I commenced the "Phylacogen" treatment, I must confess that I give to "Phylacogen" the credit for the recovery of the woman. In all twenty cubic centimeters were administered.

Editorial

By this time Don Quixote had helped Sancho to bestride his ass, and being himself mounted on Rosinante, they paced softly along, and got into a grove of poplar-trees, about a quarter of a league from the place where they mounted. Yet, as softly as they rid, Sancho could not help now and then heaving up deep sighs and lamentable groans. Don Quixote asked him why he made such a heavy moan. Sancho told him, that from his rump to his poll, he felt such grievous pains that he was ready to sink. "Without doubt," said Don Quixote, "the intenseness of thy torments is by reason, the stick with which thou wert struck was broad and long, and so having fallen on those parts of thy back, caused a contusion there, and affects them all with pain; and had it been of a greater magnitude, thy grievances had been so much the greater." "Truly," quoth Sancho, "you have cleared that in very pithy words, of which nobody made any doubt. Body of me! was the cause of my ailing so hard to be guessed, that you must tell me that so much of me was sore as was hit by the weapon? Should my ankle-bone ache, and you scratch your head till you had found out the cause of it, I would think that something; but for you to tell me, that place is sore where I was bruised, every fool could do as much."

Don Quixote De La Mancha

CERVANTES



Muscle Training in Infantile Paralysis. The outlook for the treatment of infantile paralysis is not so bad as it was. The recent discovery of the organism causing this disease at the Rockefeller Institute and its infectious character justify the expectation that in the not distant future a therapeutic antagonist may be found; at any rate, some prophylactic measures have already been suggested, and a diminution in the number of cases may be expected. In the meanwhile some valuable work is being done in the restoration of the paralyzed muscles. The residual lesion after the initial febrile disturbance has subsided is found in certain groups of cells of the anterior horns of the cord, and results in degenerative conditions of the muscles innervated from these centers.

Not all of these nutritive cells are absolutely destroyed, and many of them are simply damaged or functionally disturbed. The tendency of these implicated structures is to yield to the predominating influence of the actually paralyzed muscle fibers and bundles. If stimulation of the structures which have not been entirely destroyed is intelligently undertaken, the chances of restoration of function and of prevention are often reasonably good.

The galvanic current has long been recognized as an effective agent in stimulating degenerative muscle fibers, and it has been assumed that this activity must communicate itself to the anterior horn cells responsible for the defect in the muscles. In addition to this it is urged that voluntary stimulation from the center toward the periphery must also have its beneficial influence upon the cord. It is now the practice among those who have given this subject some special study to direct a systematic exercise of the diseased muscles by voluntary movements. A most important contribution to the mechanism to this line has been made by Miss Wilhelmine G. Wright* in a communication to the *Boston Medical and Surgical Journal*. In this article Miss Wright gives in detail the technique of exercise of each individual muscle and group of muscles, and describes how they may be most effectively stimulated by passive and active motion. The importance of this article has been appreciated by the publisher, who has reprinted the pamphlet and has placed it upon the market at a nominal price. It is a most valuable study of the function of individual muscles, and in view of the widespread prevalence of infantile paralysis should be in the hands of every practitioner of medicine. It is not unlikely that such definite details of treatment will be incorporated in textbooks upon this subject, but in the meanwhile the value of Miss Wright's work should be widely and thoroughly comprehended.

* *Muscle Training in the Treatment of Infantile Paralysis*. By WILHELMINE G. WRIGHT, Boston Normal School of Gymnastics, 1905. Reprinted from *The Boston Medical and Surgical Journal*, Vol. clxvii, No. 17, pp. 567-574, Oct. 24, 1912. Price, Twenty-five Cents. W. M. Leonard, Publisher, 101 Tremont Street, Boston, Mass.

Public Health

Edited by Joseph D. Craig, M. D.

DEPARTMENT OF PUBLIC SAFETY, BUREAU OF HEALTH, ALBANY, N. Y.
ABSTRACT OF VITAL STATISTICS, OCTOBER, 1913.*Deaths.*

Consumption	17
Typhoid fever	4
Scarlet fever	0
Measles	1
Whooping-cough	1
Diphtheria and croup	1
Grippe	1
Diarrheal diseases	8
Pneumonia	4
Broncho-pneumonia	0
Bright's disease	13
Apoplexy	11
Cancer	12
Accidents and violence	8
Deaths over 70 years	28
Deaths under 1 year	26
Total deaths	145
Death rate	17.06
Death rate less non-residents	14.00

*Deaths in Institutions.*Non-
Resident. Resident.

Albany Hospital	9	10
Albany County Jail	0	0
Child's Hospital	0	0
County House	2	3
Dominican Convent	0	0
Homeopathic Hospital	4	3
Hospital for Incurables	0	0
Little Sisters of the Poor	1	1
Penitentiary	0	1
Public places	3	0
St. Margaret's House	2	1
St. Peter's Hospital	5	4
Austin Maternity Hospital	1	1
Albany Hospital, Tuberculosis Pavilion.....	0	1
Labor Pavilion	0	1
	27	26
Births	190	
Still Births	6	
Premature Births	8	

REPORT OF VISITING TUBERCULOSIS NURSE.

Number of cases remaining.....	58
Number of new cases.....	8
Cases returned from Hospital.....	12
 Total	 78
Disposition of old and new cases:	
Died	2
Sent to hospital	7
Left city	1
Cured	1
Remaining under treatment	67
 Total	 78
Number of visits made.....	325

TUBERCULOSIS.

Bender Laboratory Report on Tuberculosis.

Positive	7
Negative	17
 Total	 24
 Living cases on record October 1, 1913.....	 309
Cases reported:	
by card	15
Dead cases by certificate.....	7
	22
 Total	 331
Dead cases previously reported.....	10
Dead cases not previously reported.....	7
Removed	1
	18
 Living cases on record November 1, 1913.....	 313
Total tuberculosis death certificates filed during October.....	17
Out of town cases dying in Albany:	
Albany Hospital Camp.....	1
Albany Hospital	1
St. Peter's Hospital	1
C. F. of L. Pavilion.....	1
County Hospital	1
	5
 City tuberculosis deaths	 12

BUREAU OF CONTAGIOUS DISEASE.
Cases Reported.

Typhoid fever	3
Scarlet fever	0
Diphtheria and croup	16
Chickenpox	4
Smallpox	0
Measles	3
Whooping-cough	3
Consumption	19
 Total	 48

Contagious Disease in Relation to Public Schools.

	Reported D. S. P.
Public School No. 8.....	4
Public School No. 21.....	2
Public School No. 24.....	1
Albany Boys' Academy	1
Christian Brothers' Academy	1
St. Patrick's School	1
St. Ann's School	1
Number of days quarantine for diphtheria:	
Longest..... 35 Shortest..... 10 Average..... 16 7/9	
Number of days quarantine for scarlet fever:	
Longest..... 0 Shortest..... 0 Average..... 0	
Fumigations:	
Houses..... 40 Rooms..... 132	
Cases of diphtheria reported.....	16
Cases of diphtheria in which antitoxin was used.....	16
Cases in which antitoxin was not used.....	0
Deaths after use of antitoxin.....	1

BUREAU OF PATHOLOGY.

Bender Laboratory Report on Diphtheria.

Initial positive	32
Initial negative	133
Release positive	11
Release negative	41
Failed	12
 Total	 229

Test of Sputum for Tuberculosis.

Initial positive	11
Initial negative	18
Total	29

BUREAU OF MARKETS AND MILK.

Public Market Inspections	13
Market reinspections	110
Fish market inspections	3
Hide house inspections	4
Slaughter house inspections	3
Packing house inspections	2
Rendering plant inspections	2
Milk licenses issued to peddlers.....	75
Milk licenses issued to stores.....	250
Milk depots reinspected	22
Milk wagons inspected	75
Milk cans inspected	49
Unclean wagons	5
Unclean cans	5
Notices served	3
Lactometer tests	187
Below standard	4
Temperature tests	187
Below standard	12
Fat tests	8
Below standard	2
Chemical tests	6

MISCELLANEOUS.

Work certificates issued to children.....	46
Number of written complaints of nuisances.....	39
Privy vaults	2
Closets	5
Plumbing	10
Other miscellaneous complaints	22
Cases assigned to health physicians.....	54
Calls made	113
Number of dead animals removed.....	398

Medical News

Edited by Arthur J. Bedell, M. D.

ALBANY GUILD FOR THE CARE OF THE SICK.—DEPARTMENT OF VISITING NURSING.—STATISTICS FOR OCTOBER, 1913.—Number of new cases during month, 162; classified as follows: Dispensary patients receiving home care, 29; district cases reported by health physicians, 1; charity cases reported by other physicians, 36; moderate income patients, 86; metropolitan patients, 10; old cases still under treatment, 97; total number of cases under nursing care during month, 259. Classification of diseases

for the new cases: Medical, 27; surgical, 19; obstetrical under professional care, mothers, 42, infants, 42; throat and nose, 1; infectious diseases in the medical list, 31. Disposition: Removed to hospitals, 10; deaths, 7; discharged cured, 108; improved, 29; unimproved, 5; number of patients still remaining under care, 100.

Special Obstetrical Department.—Number of obstetricians in charge of cases, 2; students in attendance, 3; nurses in attendance, 2; patients carried over from last month, 0; new patients during month, 4; patients discharged, 4; visits by head obstetrician, 1; by attending obstetrician, 2; by students, 40; by nurses, 49; total number of visits for this department, 92.

Visits of Nurses (all departments).—Number of visits with nursing treatment, 1,222; for professional supervision of convalescents, 553; total number of visits, 1,775; cases reported to the Guild by one health physician, and 41 other physicians; graduate nurses 8, and pupil nurses 6 on duty.

Dispensary Report.—Number of clinics held, 91; new patients, 128; old patients, 350; total number of patients treated during month, 478. Classification of clinics held: Surgical, 14; nose and throat, 8; eye and ear, 17; skin and genito-urinary, 8; medical, 14; lung, 9; dental, 0; nervous, 0; stomach, 1; children, 12; gynecological, 8.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.—A special meeting of the Medical Society of the County of Albany was held in the City Hall, Cohoes, October 22, 1913, at 8:30 P. M., and action taken on the death of Dr. J. L. Archambault.

A special meeting of the Medical Society of the County of Albany was held at the Albany Medical College, on Tuesday, November 11, 1913, at 5:00 P. M., and action taken on the death of Dr. T. L. Carroll.

The regular meeting of the Medical Society of the County of Albany was held at the Albany Medical College, November 19, 1913, at 8:30 P. M.

The following program was presented: "The Passing of the Stomach Tube," Dr. Jerome Meyers; "The Relationship of Lupus Erythematosum to Tuberculosis," Dr. Louis B. Mount.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.—The regular meeting of the Medical Society of the County of Schenectady was held in the rooms of the Society, Tuesday, November 18, 1913, at 8:30 P. M.

Scientific Program: "Diagnosis and Pathology of Syphilis," Dr. W. B. Stone; "Present Treatment of Syphilis," Dr. F. C. Reed; "Treatment of Locomotor Ataxia," Dr. W. L. Fodder.

FOURTEENTH NEW YORK STATE CONFERENCE OF CHARITIES AND CORRECTION.—The Fourteenth New York State Conference of Charities and Correction was held at the Hotel Statler, Buffalo, N. Y., November 18, 19 and 20, 1913.

Public Health, Public Institutions, Children, Care of the Poor, the Mentally Defective, and Delinquency were some of the leading topics the Conference considered.

PLANS FOR THE NEW ALBANY MEDICAL COLLEGE BUILDING.—Plans submitted by four architects of Albany for the new Albany Medical College building were on exhibition in the State Education building during the week ending November 15th.

NEW OFFICERS OF THE ALBANY ORPHAN ASYLUM.—The following have been elected officers of the Albany Orphan Asylum: President, John K. Howe; vice-president, Frederick Townsend; secretary, Dr. J. Montgomery Mosher; treasurer, Frederick Tillinghast.

THE HISTORICAL MEDICAL MUSEUM.—The great interest aroused by the Historical Medical Museum during the recent meeting of the International Congress of Medicine has not been abated. Short accounts of the Museum appeared in the Journal of May 10th and June 28th. Since then considerable additions have been made to the collections; but it is Mr. Wellcome's wish to make it as complete as possible. Many families have relics such as MSS., early printed books, autograph letters and other documents and objects associated with, or collected by their ancestors who were engaged in medicine, surgery, pharmacy, and the allied sciences. Often, on the death of those who cherish such relics, the things are relegated to the garrets, or sent to auctions where they are scattered among strangers who buy them for a trifle as curios, and so the history and record of associations with the original inventor or user are lost forever. We venture to suggest that it would be well if these things could be sent to take their place in the Historical Medical Museum, which has now been established in London on a permanent basis by Mr. Wellcome, where they would be preserved and at the same time form a permanent tribute to the work and memory of those from whom they have been handed down. Many things which are insignificant and of little historical value in themselves if isolated in small private collections become important when brought into association with a series of others arranged chronologically; they often supply the missing links in the chain showing the evolution of such objects. An isolated historical object may be aptly compared to a single mosaic tessera which in itself alone signifies nothing, but when put in its place with others becomes part of a picture and thus may help to complete a lasting record of a famous deed or a great event.

MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY.—Examinations for the appointment on January 1, 1914, of one Aural and one Ophthalmic House Officer will be held at the Massachusetts Charitable Eye and Ear Infirmary, on Thursday, December 11, 1913, at 10 A. M.

The service in the Aural Department is of eighteen months' duration, with residence in the hospital.

The service in the Ophthalmic Department is of eighteen months' duration, with residence in the hospital.

Applicants are examined in Anatomy, Physiology, Bacteriology, Pathology, Clinical Medicine, and Therapeutics and Surgery.

Application must be made before December 6, 1913. Application blanks can be obtained from the Superintendent at the hospital or will be sent by mail.

The number of patients treated in the wards last year was 3,652; 1,756 eye, 1,896 ear. The number of new out-patients was 30,012. The total out-patient attendance was 58,062. By these figures some idea can be obtained of the clinical opportunities offered.

THE NEW COCAINE LAW.—The attention of the manufacturers of alkaloid cocaine or eucaine or any product in which cocaine or eucaine or their salts may be an ingredient; wholesale dealers in drugs, licensed pharmacists, druggists, practising physicians, veterinarians and dentists is called to the provision of paragraph K, of section 1746, chapter 470 of the Laws of 1913, to wit:

(k) Within thirty days after this section takes effect, every manufacturer of alkaloid cocaine or its salts or alpha or beta eucaine or their salts or any admixture, compound, solution or product in which cocaine or eucaine or their salts may be an ingredient, every wholesale dealer in drugs, licensed pharmacist, licensed druggist, duly registered practising physician, licensed veterinarian and licensed dentist shall make a record of the amount of each of said substances possessed by him in a book to be kept for that purpose, which may be the book in which purchases are recorded. Such book shall be kept at the regular place of business of each of said persons in the State of New York, and there shall be specifically stated in such book the amount of each of said substances possessed by the person making the record and the particular place in which the same is kept. Such book shall be open to inspection by any prosecuting officer in the state or his subordinates, and by such persons as may be designated by him. Such book and record shall be preserved for at least five years after the date of the last entry made therein. In the event that the amount of said substances possessed at the time this section takes effect by any licensed pharmacist, licensed druggist, duly registered practising physician, licensed veterinarian or licensed dentist, shall exceed the amount specified in paragraph (1) it shall be the duty of each of such persons to report in writing to the state department of health, within thirty days after this act takes effect, the amount of each of such substances possessed by him and the place where the same is kept. Such reports shall be alphabetically filed in the office of the state department of health and shall be open to public inspection. Any person violating the provisions of this paragraph of this section shall be guilty of a misdemeanor.

The law took effect May 9, 1913, but up to the present time only a small number of those required to file reports with the state department of health have done so, and it is urged that persons liable to prosecution should comply with the law without further delay.

AMERICAN COLLEGE OF SURGEONS.—The first convocation of the American College of Surgeons was held in Chicago, November 13, 1913, at Congress Hotel.

JOURNAL OF AGRICULTURAL RESEARCH ISSUED.—The first number of the new *Journal of Agricultural Research*, consisting of eighty-seven pages, of letter press, line drawings and five plates, including one color plate published by the United States Department of Agriculture, appeared October 10th.

Citrus Ichangensis, a promising hardy new species from Southwestern China and Assam; *Cysticercus Ovis*, the Cause of Tapeworm Cysts in Mutton; The Turpentine Leaf-Miner, are some of the subjects treated.

Dr. B. T. Galloway says of the purposes of the *Journal*:

"The recent advances in the theory and practice of agriculture have come almost entirely from scientific research applied to agricultural problems. Accumulated results of centuries of painstaking studies have been drawn upon, and it has become evident that further improvement in agriculture calls for continued investigation of the most accurate and thorough nature. The first recognition of the economic value of progress in these investigations as well as the initial application of theories to practical problems comes usually from specialists. Indeed, only in rare instances is the significance of the results of scientific research apparent to farmers, since newly discovered facts are seldom directly applicable to agricultural conditions.

The suggestive or the indirect value of reports of new work is usually of paramount economic importance; it is the purpose of the *Journal of Agricultural Research*, therefore, to record investigations bearing directly or indirectly upon economic conditions of agriculture."

According to the foreword the *Journal* for the first few issues will contain papers from the Department of Agriculture only. The later numbers, however, will probably include articles prepared and submitted by investigators in the State Agricultural Colleges and Experiment Stations. The book is highly technical in character and will not be circulated except among scientific specialists.

COOK COUNTY CIVIL SERVICE COMMISSION.—The Cook County Civil Service Commission, Chicago, announces a competitive examination, open to citizens of the United States, for appointments on the Staff of the Cook County Hospital, which admits approximately 35,000 patients per year, in the Department of Nervous and Mental Diseases, to be held December 15, 1913, at 7 P. M. Appointments are for a period of six years, with a service of six hours per week, continuous throughout the year.

WOOD ALCOHOL BLINDNESS.—The Society for the Prevention of Blindness of the State of New York again calls attention to the dangers of wood alcohol as cause of blindness, and asks for support in legislature.

NEW YORK STATE VETERINARY COLLEGE.—The new hospital and clinical buildings for large and small animals of the New York State Veterinary College, at Cornell University, Ithaca, N. Y., was opened Saturday evening, November 15, 1913, with the following exercises: Remarks, President Jacob Gould Schurman; "New York State Veterinary College at Cornell University," Dr. V. A. Moore, Professor Pathology and Bacteriology and Director; "Applied Veterinary Medicine and Hygiene," Dr. D. H. Udall, Professor Veterinary Medicine; An Address, Dr. David S. White, Dean of the College of Veterinary Medicine, Ohio State University; "The Relation of Veterinary Medicine to the General Public," Dr. Louis A. Klein, Dean of the School of Veterinary Medicine, University of Pennsylvania; Remarks, Dr. James Law, Professor of Medicine Emeritus and First Director of the College.

THE SARATOGA SPRINGS.—Under the law, this Commission was charged with the duty of acquiring the lands necessary to secure and preserve for the State the mineral waters in the town of Saratoga Springs. This has been done in large measure. The pumping of gas from the ground has been stopped and the springs have been restored, several of them flowing naturally, several spouting high in the air, and a few affording an abundance of water which will be pumped as necessary. All these springs are mineralized to a varying degree. They cover a wide range of therapeutic application, for they comprise alkaline-laxative, alkaline-saline, ferruginous, iodic and lithic drinking waters, as well as waters suitable for the purposes of eliminative, tonic and sedative baths. There is one spring from which water is obtained closely resembling that from the bathing springs at Bad Nauheim, Germany, and suitable for use in the "Nauheim treatment" for certain heart diseases. Here can be given the treatment administered at many of the German and English spas, owing to the great variety in the mineral constituency of the waters of this great plateau. In addition all the waters are supersaturated with CO₂, at their temperatures when drawn and are radioactive. A circular showing the analysis of the springs already in operation will be sent on application.

At present the waters of the following springs are bottled for distribution under the State guarantee of authenticity: Hathorn No. 1 and No. 2, Coesa, Geyser, and Minnonebe.

The aim of the Commission is to develop the springs in order that they may be utilized as at any foreign spa for bathing and drinking. The development of the State Geyser Park of over 250 acres, with its natural advantages of great trees of various kinds, a deep ravine with a crystal stream flashing over rocky obstructions, or rippling placidly through shaded dells, or expanding into broad mirrors, will afford sylvan

influences which are beneficial to many patients; while other diversions are afforded by the village parks and Casino, the shops and theatres, the drives over excellent roads through avenues of elm trees and maples, passing groves of lofty pines, with view of the Adirondacks and the Green Mountains, or following the winding highways along the shores of the lakes. As in the cases of the European health resorts, patients will come to Saratoga for certain courses of treatment which they cannot obtain at home, and will be returned to the home physician again.

An Advisory Council is being formed to study the conditions at Saratoga, suggest methods for development and advise with the Commission. It is requested that each County Medical Society elect immediately a corresponding member of this Council, who shall receive the reports and bulletins issued by the Commission, shall communicate to his society the facts concerning the progress of the work here, and shall present annually a brief paper on the springs and their uses and the growing equipment of Saratoga, and that it communicate at once the name and address of the corresponding member chosen to Dr. Albert Warren Ferris, the medical expert attached to this Commission.

It is earnestly requested that each County Medical Society arrange for a special or regular meeting to be held in December, at which a brief paper on the springs shall be presented by the corresponding member of the Council, giving members information of the present conditions at Saratoga, the work planned, and, in short, the potency and promise of Saratoga Springs.

NEW YORK STATE BULLETIN, DIVISION OF COMMUNICABLE DISEASES, SEPTEMBER, 1913, gives the following report: Tuberculosis, a slight decrease; Cancer, fifty cases; Diphtheria, an increased prevalence; Measles, decreased prevalence; Scarlet Fever, a slightly increased prevalence; Typhoid Fever, increased in prevalence; Cerebrospinal Meningitis, a slight increase; Poliomyelitis, decreased in prevalence; Smallpox, decreased; Pneumonia, increased in prevalence; Whooping Cough, decreased.

PERSONALS.—Dr. EDWARD W. BECKER (A. M. C., '97), has resigned as surgeon of the Second Infantry, National Guard, N. Y.

—Dr. C. W. LOUIS HACKER (A. M. C., '05), has removed from 206 State Street to 352 Hudson Avenue, Albany, N. Y.

—Dr. HARRY B. GILLEN (A. M. C., '09), has been appointed medical inspector of the public schools of Cohoes.

—Dr. WILLIAM F. RAFFERTY (A. M. C., '11), has been elected coroner for Rensselaer County.

DED.—Dr. TERENCE L. CARROLL (A. M. C., '85), died at his home, 297 Lark Street, Albany, November 7, 1913.

—Dr. EDGAR C. COLLINS (A. M. C., '80), died at the Collins Emergency Hospital, Springfield, Mass., November 14, 1913.

--Dr. DENNIS M. SMITH (A. M. C. '88), died at Cambridge, N. Y., October 5, 1913, aged 66.

--Dr. DOUGLAS AYRES (A. M. C. '65), died at Fort Plain, N. Y., November 20, 1913, aged 71.

In Memoriam

TERENCE L. CARROLL, M. D.

Dr. CARROLL died at his home in Albany, on Sunday, November 9, 1913, of myocarditis, after an illness of about five months.

Dr. Carroll was born in Albany on October 4, 1863, the son of James H. and Jane Rafferty Carroll. He attended the public schools and was graduated from the Albany High school in 1882. He entered the Albany Medical College with the class of 1885, and after he was graduated served a few months as resident physician in the Albany Almshouse. He then took a position as surgeon on the revenue cutter *Bear* and served two years in Arctic waters. This expedition was for the protection of the seal industry, and for the rescue of whalers. It was a very interesting experience. The *Bear* sailed from New York, cruised around Cape Horn, and was stationed in Alaskan waters. Dr. Carroll returned with many facts acquired in what was at that time, a very unique cruise, wrote for papers and gave several interesting lectures for the entertainment and profit of various societies and organizations. Upon his return he became resident physician in the Albany county penitentiary, and then engaged in private practice.

Dr. Carroll was for many years an attending physician at St. Peter's Hospital. To his work in this hospital, the Sisters of Mercy have made the following appreciative tribute:

"In the earlier days, when the work outgrew the limits of the old building and it became evident that schemes for enlargement must be devised, Dr. Carroll gave lavishly of his counsel, his means and his time. His was the animating spirit which dominated the organization of St. Peter's League, known now as the Auxiliary, and his the cheering enthusiasm which gave impetus to its later progress. His interest in the Cosmopolitan was warm and ardent, and the marked success of the "Relief Campaign" was due in great measure to his laboring early and late, and to his skill in managing that mountain of difficulties which would have crushed a less dauntless spirit. To his energy also may be attributed the excellent card and chart system and the method of keeping records in use at the hospital."

He was also a member of the attending staff of the South End Dispensary, and was at one time a member of the Board of Health of the City of Albany.

Dr. Carroll was a member of the State and County Medical Associations, and several social organizations, including the Knights of Columbus, in which he held the fourth degree; the Catholic Union, C. M. B. A., etc.

Dr. Carroll's personality was marked. He was genial and cordial in his manner, outspoken in his opinions and beliefs, and always courteous. He was unusually charitable, and gave freely of his professional services and even substantial assistance to the poor when it seemed to him needed. He was yet a young man, and carried an influence for good to be counted upon by his associates and contemporaries. He avoided indulging personal ambition at the expense of others, and appeared contented to do his own work faithfully and quietly. He was held in affectionate regard and esteem, and his premature death is a distinct loss.

Current Medical Literature

REVIEWS AND NOTICES OF BOOKS

The Physician's Visiting List (Lindsay and Blakiston's) for 1914.
Sixty-third year of its publication. Philadelphia: P. Blakiston's Son and Co.

This convenient little book (pocket edition, twenty-five patients per week) appears in its usual form in this its sixty-third year. The mere fact of its long period of publication shows the esteem with which it is regarded by the profession.

In addition to the usual pages for recording the patients seen with the services rendered, there are pages for general memoranda, pages for recording obstetric and vaccination engagements, births and deaths, addresses of patients and nurses, bills and accounts and cash accounts.

Preceding these there are calendars for the present and the succeeding years, articles on the metric system (with comparative tables), on incompatibility, on the treatment of asphyxia and apnoea, the treatment of poisoning, dose tables in both the apothecaries and metric systems, and tables of utero-gestation, quarantine periods and comparison of thermometers.

C. K. W., JR.

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*Journal of the Alumni Association of the
Albany Medical College*

DECEMBER, 1913



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Journal of the Alumni Association of the Albany Medical College

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A. VANDER VEER, M. D. W. G. TUCKER, M. D. ANDREW MACFARLANE, M. D.

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THE TUBERCULOUS INVALID.—The pricking of the Friedmann bubble but served to still further confirm and accentuate the vital importance of the well defined methods of treatment for tuberculosis, that have given such encouraging results, i. e., fresh air, sunshine, rest, nutritive reinforcement and judicious medication. A proper combination of these four remedial factors is practically certain to place the incipient tuberculous invalid upon the road to recovery, if the patient is intelligently handled and the treatment persisted in. While it is, of course, acknowledged that the first three non-medicinal agents referred to constitute the vital elements of the upbuilding régime, considerable aid is afforded by judicious medication. Hematinic reinforcement should certainly not be neglected, in view of the secondary anemia which is almost always apparent. Among the agents which have produced the best results in the revitalization of the blood, Pepto-Mangan (Gude) is the most generally eligible and acceptable. As it is thoroughly palatable, neutral in reaction, free from irritant properties and devoid of constipating effect, the digestion of the patient is not disturbed, while the appetite and general vital tone improve more rapidly and satisfactorily than when hygienic and nutritive measures are depended upon exclusively.



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An Important Report

By Professor W. A. Puckner

Secretary of the Council on Pharmacy and Chemistry
American Medical Association

In the Journal of the American Medical Association, September 13, 1913, Professor Puckner reports the result of the investigation of products of a number of pharmaceutical houses. In this report are embodied the results obtained by Dr. R. A. Hatcher, of Cornell University Medical School, who made a special examination of the various digitalis products of these pharmaceutical houses, demonstrating the following.

FACTS

First.—That commercial digitalis preparations vary most widely in activity.

Second.—That Mulford Digitalis, the most active, is four times as active as the weakest.

Third.—That the digitalis prepared by other firms, assumed to be physiologically assayed, showed a variation of more than 100 per cent in strength.

Fourth.—That the digitalis next in strength to the Mulford preparation, was only 65 per cent, and the weakest, 29 per cent in activity.

CONCLUSIONS

While there is no official standard of activity for digitalis, Dr. Hatcher adopted the Mulford Fluidextract Digitalis as the standard of comparison, because its activity was that of a good digitalis. The report proves the activity and reliability of the Mulford Digitalis, and coincides with the former report made by the United States Bureau of Hygiene, tabulated in Bulletin No. 48, December, 1908, by Edmunds and Hale, relating to the Mulford Fat-free Tincture of Digitalis—**Digital**.

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COLLARGOLUM CONTINUES TO BE THE PREFERRED INJECTION MEDIUM IN SKIAGRAPHY AND URETERO-PYEOGRAPHY.—While by far the greatest majority of American and European radiologists agree that Collargolum, which was first recommended by Voelcker and Von Lichtenberg in 1906 as the most advantageous injection medium into the bladder and renal pelvis, has not been equalled technically by any other material since suggested for this purpose, occasional reports of alleged injury from its use have recently appeared in the literature.

W. F. Braasch of the Mayo Clinic, St. Mary's Hospital, Rochester, Minn., who was the first to extensively apply Voelcker and Von Lichtenberg's technique in the United States and has introduced many valuable modifications and diagnostic possibilities of the same, states in an article on "Recent Progress in Uretero-Pyelography" (Journal Mich. State Med. Soc., Apr., 1913) that this technique has been employed in the Mayo Clinic in more than one thousand cases without fatality or permanent injury. The occasionally observed colic following examination by this method was not more frequent nor more severe than after urethral catheterization alone.

It has been his experience that severe reaction following pyelography, is usually the result of errors in technique or lack of care in the selection of the cases. In regard to the latter, careful perusal of Dr. Braasch's article is strongly recommended to all those interested, a short abstract being inadequate to do justice to this part of his report.

The following technical precautions are urged by him:

The Collargolum crystals should be carefully ground in a mortar when put into solution (10%) and the latter filtered, otherwise undissolved crystals may be deposited on the walls of the pelvis and ureter and act as an irritant. The solution should be carefully warmed before injecting, not boiled, since it coagulates with boiling. The solution should be injected by the gravity method, watching the patient for the slightest evidence of pain. From 2 to 8 cc. will usually suffice unless symptoms of obstruction have been previously noted. A large urethral catheter should be used so that the injected solution may drain away easily. The apparatus for the X-Ray and the injection should be so arranged that there will be no delay after the catheter is inserted.

The unequalled diagnostic value of skiagraphy and uretero-pyelography by means of Collargolum and the innocuousness of the method if carried out correctly is also vouched for by Dr. George H. Stover, Prof. of Roentgenology, University of Colorado (Annals of Surgery, June, 1913); Dr. G. Strassmann of the Surgical Polyclinic of Prof. F. Voelcker, Heidelberg, Germany; Prof. Th. Nogier and Dr. J. Reynard of the University of Lyons (Lyon Medical, 1912, No. 51); Dr. William I. Bruce, Radiologist to the Charing Cross and the Children's Hospital, London (British Medical Journal, Oct. 14th, 1911); Dr. E. M. Stanton, Schenectady, N. Y. (Albany Medical Annals, July, 1912); Dr. William T. Belfield, Prof. of Genito-Urinary Surgery, Rush Medical College (Journ. A. M. A., Mch. 1, 1912), Dr. Lewis G. Cole, Clinical Professor of Radiology, New York Post Graduate Hospital (The Post Graduate, Jan., 1911); Dr. N. Nemenow, Chief of Central Roentgen Laboratory, St. Petersburg Medical High School for Women (Fortschr. auf. den Geb. d. Roentgenstrahlem, Vol. 18, No. 3), and by a constantly growing number of other reports from nearly every civilized country.

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While atrophy may be due to many causes, it is very constantly associated with errors of diet. Marasmic infants are always hungry, often ravenous, are usually not troubled with vomiting, and their stools are generally smooth and apparently well digested. Infants in this condition seem to digest their food properly, but do not assimilate it. Therefore, the diet must of necessity be such that it is assimilated easily and quickly.

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Atrophy, Marasmus, Malnutrition (Continued)

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This association was organized January 20, 1874. The membership consists of the officers and graduates of the college. Total number of graduates 2,866. Names and addresses upon the roll, 1,561. The object of the association is to promote the interests of the college in the work of medical education, and to cultivate social intercourse among the alumni. The annual meeting is held upon commencement day. The officers of the association, excepting the members of the executive committee who serve for three years, are elected annually.

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together with the president, recording and corresponding secretaries, treasurer, historian and registrar of the college, *ex officio*.

The next annual meeting will be held in the college building on Tuesday, May 26, 1914. So far as their addresses can be ascertained all graduates of the college are notified of the annual meetings through the mail. Those who do not receive such notice regularly are requested to furnish the corresponding secretary with their addresses and to keep him informed of any change in their place of residence. The yearly dues are fixed at one dollar. This may be sent to Dr. Robert Babcock, Treasurer, 102 Lancaster street, Albany, N. Y.

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All specimens should be accompanied by a brief note of the clinical condition and a special reference to the character of the examination desired. Name and address of person to whom report is to be sent should be clearly indicated.

1.—Pathological material from either operation or autopsy should be wrapped in moist gauze surrounded by oiled paper or rubber protective. When it is not possible for material to reach the laboratory within twenty-four hours, it should be placed in alcohol (80%) or formalin solution (10%). Small fragments of tissue and the material from uterine curetage should always be so preserved.

2.—Sputum should be sent in clean wide-mouth bottles; the ordinary vaseline bottle answers all purposes. The same bottle is suitable for faeces. Urine should be in clean bottles containing not less than six ounces.

3.—Exudates and other material requiring a bacteriological examination by culture should be placed in containers previously sterilized by heat (not chemical disinfectants).

4.—Outfits for special purposes, as diphtheria cultures, Widal reaction, etc., will be sent upon application.

5.—Tissues and fluids for animal inoculation, e. g., hydrophobia, tetanus, tuberculosis, etc., are best sent packed in ice. In cases of suspected hydrophobia it is advisable to send the entire animal without injury to the brain or cord.

6.—Haematological examinations at the patient's home will be made by appointment.

7.—The bacteriological examination of milk requires certain precautions in the collection of the sample. Special instructions and proper containers will be sent upon application. The same holds true for the collection of blood for the Wassermann-Noguchi reaction for syphilis.

8.—Members of the staff are at all times available for the purpose of conducting post-mortem examinations.

9.—For a chemical examination of milk from two to four ounces should be forwarded.

The fee for complete haematological examination at patient's home, \$10.00; for post-mortem examination, \$5.00 per hour of time consumed; for Wassermann-Noguchi reaction \$10.00; for all other examinations, a uniform fee of \$5.00. The charge for animal inoculation varies according to the character of the experiment. Under certain circumstances and upon request, these fees may be reduced.

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